SITUATION ANALYSIS OF REPRODUCTIVE HEALTH CARE IN THE STATE OF BAHIA, BRAZIL: ASSESSING THE IMPACT OF INTERVENTIONS IN 1994-1998

Jeanne A. Noble
Population Council, Lima Office

Balbina Lemos
Projecto de Saude Reproductiva
Secretaria de Saude do Estado da Bahia

Loren Galvao
Population Council, Campinas Office

Sandra Mara
Secretaria de Saude do Estado da Bahia

Alex Rios
Population Council, Lima Office

Angela Viana
Secretaria de Saude do Estado da Bahia

August 1, 1997 - May 31, 1998

EXECUTIVE SUMMARY

In 1994, a baseline Situation Analysis study was conducted in the northeastern state of Bahia, Brazil to provide information on the availability, accessibility, and quality of reproductive health services in public sector facilities. Service delivery points (SDPs) were sampled from all municipalities randomly selected for the 1991-92 Demographic and Health Survey *Pesquisa Sobre Saúde Familiar no Nordeste do Brasil.* In 1994, 276 SDPs were evaluated in terms of: readiness to provide reproductive health services; functioning of logistics and supervisory systems; the quality of care received during reproductive health consultations; and client satisfaction with services. Study findings confirmed that few facilities had the human and material resources needed to offer reproductive health care.

Since 1994, the State Health Secretariat of Bahia has carried out numerous interventions to improve reproductive health care throughout the state. To assess the impact of interventions, a second round of Situation Analysis was completed in 1998 in the same municipalities visited four years earlier. Findings from the 1994 baseline study are compared with 1998 data to analyze changes in the availability and quality of reproductive health services over time. Wherever possible, distributions for the 73 facilities that were targeted for intensive interventions from SESAB's Reproductive Health Project are displayed separately.

The percentage of all SDPs offering family planning services increased from 45 percent in 1994 to 53 percent in 1998, while the proportion of intervention facilities offering family planning increased from 71 to 95 percent. There was no change in the proportion of facilities offering gynecological or prenatal services, with either service offered at just over 80 percent of SDPs.

The percentage of facilities with stocks of oral contraceptives and injectables increased significantly during the study period, while the availability of barrier methods and the IUD remained stagnant. However, there was significant improvement in SDPs overall preparation to offer the IUD, increasing from 10 to 25 percent of all facilities, largely due to increased availability of medical equipment and supplies.

Findings indicate that logistics management is improving, although most facilities still reported stockouts in one or more items during the two months prior to the 1998 survey. Condoms seemed to pose the greatest logistical challenge, with recent stockouts reported by 59 percent of SDPs offering family planning services.

Important gaps remain in the availability of medical equipment. Specifically, over a third of facilities do not have tenaculums and 28 percent do not have ring forceps, precluding the delivery of IUD services in all facilities missing either item. Over one quarter of all centers and posts in the interior do not have speculums or exam tables, rendering them unable to offer basic gynecological services. And nearly two-thirds of all facilities do not have microscopes, severely limiting their ability to diagnose and treat RTIs.

In general, SDPs in Salvador are better prepared to provide services than SDPs in the interior. Health centers and posts are better prepared to offer contraceptive methods and prenatal services, while hospitals scored highest in readiness to provide preventive and curative gynecological care.

Results suggest that the quality of prenatal care is improving, in terms of both the exchange of information between provider and client as well as the provider's technical competence. Similar improvements in the quality of care were not found during observations of family planning or gynecological visits. Although the number of contraceptive methods discussed with new family planning users has increased, few providers screen new users for potential contraindications nor do they provide basic information on correct method use or expected side effects.

Gains in SDP readiness to provide gynecological services and a slight improvement in the information exchange between gynecological providers and clients were not accompanied by a significant change in the proportion of gynecology clients offered a Pap smear (62 percent) or breast exam (30 percent), and the percentage of symptomatic clients receiving a speculum exam decreased significantly. Findings suggest an urgent need to improve RTI case management. Providers rarely pose basic risk assessment questions to symptomatic clients, less than half of whom receive a minimal gynecological evaluation. The growing threat of HIV infection in Brazil makes rapid improvement in RTI diagnosis and treatment a critical issue.

ACKNOWLEGEMENTS

We wish to thank the United States Agency for International Development (USAID) and its Mission in Brazil for its interest in and financial support of both Situation Analysis studies, through the INOPAL III Project of the Population Council.

The authors also wish to thank the following individuals for contributing to this project in its various stages. Juan Díaz, Population Council, Brazil, and Federico León, Population Council, Lima, gave administrative and technical support throughout the project's implementation. Lúcia Brito and Kátia de Lima, of the Population Council, Brazil, and Ana Prevoó, of the Population Council, Lima, performed much of the administrative work.

Finally, we are indebted to all the interviewers and supervisors that made this study possible, and to the women and health providers who took the time to answer our lengthy questionnaires.

TABLE OF CONTENTS

I. INTRODUCTION

The Northeast: A Priority Region

Significant socioeconomic differences divide Brazil's five geographical regions, with the widest gaps between the economically strong states of the South and the less developed northeastern region. While only 6 percent of the population is without formal schooling in the South, 21 percent of the Northeast's population age 6 and older has never attended school (BEMFAM and Macro International, 1997: 23). Infant mortality, estimated to be 48 deaths per 1,000 live births for the country as a whole, has reached a low of 25 per 1,000 in the South, but is nearly three times as high (74 per 1,000) in the Northeast (Ibid., 98). Differences in mortality seem to be at least partially explained by differential access to, or utilization of, services. In the South and Southeast, over 60 percent of women giving birth between 1991 and 1996 reported making seven or more prenatal visits, compared with only 27 percent of respondents in the Northeast. More worrisome is the fact that 26 percent of respondents in the Northeast reported that they had not received *any* prenatal care during their last pregnancy, compared to less than 7 percent of respondents in the southern states of Rio and São Paulo (Ibid., 106). Similarly, over 90 percent of all births are attended by physicians in Rio and São Paulo, compared to only 57 percent of births in the Northeast (Ibid., 108).

Although the Total Fertility Rate at the national level (2.5) is approaching replacement, regional figures range from a low of 2.1 in the state of Rio to a high of 3.1 in the Northeast (Ibid., 40). Such differences are reflected in the use of contraception: 76 percent of all women in union use a modern method of contraception in Rio, compared to 62 percent of women in the Northeast (Ibid., 56). Contraceptive alternatives are restricted throughout the country, and the vast majority of users rely on either tubal ligation (52 percent of all users) or oral contraceptives (27 percent of users).

Finally, the incidence of cervical cancer in the Northeast (36 per 100,000 women) is among the highest in the country (Ministry of Health of Brazil, 1996: 8), likely related to restricted access to gynecological services.

Due to these regional disparities, the US Agency for International Development (USAID) has made northeastern Brazil a priority region, supporting numerous reproductive and child health interventions over the past several years. The majority of these interventions

have been concentrated in the northeastern states of Ceará (population 7 million) and Bahia (population 13 million).

Service Delivery Context

In Brazil, women's reproductive health received new attention beginning in 1984 with the development and implementation of the national Program for Women's Comprehensive Health Care (PAISM). Conceived as an alternative to the traditional model of women's health care in the public sector, which is often limited to maternal and child health concerns, PAISM aims to provide women with comprehensive reproductive health care and education from adolescence to menopause. In spite of the policy advances that accompanied the development of the PAISM model, recent evaluations have shown highly uneven implementation at both the state and municipal level (World Bank, 1991: 4).

In 1994, the Ministry of Health began institutionalizing family planning services in the public sector. In spite of the absence of an effective national policy promoting access to family planning services, contraceptive use has been widespread, although largely limited to female sterilization and oral contraceptives purchased in pharmacies or obtained through private physicians or non-governmental organizations, such as the International Planned Parenthood affiliate BEMFAM.

The State Health Secretariat of Bahia (SESAB) initiated the *Reproductive Health Project* in 1992 whose main goal is to expand access to family planning based on the principal of free and informed choice. Efforts to expand service access are accompanied by information, education, and communication (IEC) campaigns to increase women's awareness and knowledge of contraception, as well as lead to realistic and well-informed attitudes and practices.

Since 1992, the *Reproductive Health Project* has provided services for over one million women, 24 percent of whom are adolescents, in 157 of the state's 415 municipalities. Approximately 1,100 providers have participated in formal training courses and approximately 40,700 IEC sessions on family planning, referred to as "Informed Contraceptive Choice", have been held in SESAB facilities. As part of the IEC campaign *Mulher é para se cuidar*, over 4,500 reproductive health posters, 100,000 flyers, and 168,000 pamphlets on contraceptive methods have been distributed. The project continually distributes combined and progestin-

only oral contraceptives, injectables, condoms, spermicides, diaphragms, and IUDs. IUD kits are also distributed, containing the additional medical equipment and consumable supplies needed to perform insertions and removals.

V. II. STUDY JUSTIFICATION AND OBJECTIVES

In 1994, a baseline Situation Analysis was conducted in Bahia to provide information on the availability, accessibility, and quality of reproductive health services in public sector facilities throughout the state. Specifically, study facilities were evaluated in terms of:

- types of reproductive health services routinely available;
- presence of trained providers, essential equipment, and consumable supplies;
- functioning of logistics and supervisory systems;
- adequacy of the information exchange between providers and clients;
- technical competence of providers; and
- client satisfaction with service quality.

In order to assess the impact of SESAB activities and other USAID-funded interventions during 1994-98, a second round of Situation Analysis was carried out over a seven week period beginning in March 1998. Findings from the 1994 baseline study are compared with 1998 data to analyze changes in the availability and quality of reproductive health services over time. It is hoped that the results of this comparative analysis will serve to strengthen and perhaps re-direct program efforts by indicating where interventions have been successful and where they have fallen short of their goals. As with any operations research study, the ultimate measure of success will be whether study findings inform and improve program implementation at all relevant levels.

III. METHODOLOGY

Sample Selection

For the 1994 Situation Analysis, service delivery points (SDPs) were drawn from the 41 municipalities randomly selected for the 1991-92 Demographic and Health Survey *Pesquisa Sobre Saúde Familiar no Nordeste do Brasil* (BEMFAM and Macro International, 1991).[1] Within each municipality, all public or subsidized health facilities were visited that offered any type of reproductive health service. A total of 276 SDPs were visited, 85 within the Salvador metropolitan area and 191 from the interior of the state. Each SDP was visited for a complete day of service delivery with the number of observations and exit interviews conducted varying with client flow, but generally not exceeding six of each.

In 1998, the 41 municipalities were revisited using the same sampling criteria for SDP inclusion as in 1994. A total of 234 SDPs were visited in 1998, 208 of which had been previously visited in 1994. The presentation of inventory results is limited to the 208 SDPs visited in both years, while data from clinical observations and the interview modules are presented for all SDPs offering reproductive health services at either point in time.

The exclusion of new SDPs from the inventory analysis is based on the assumption that new facilities typically open with adequate stocks and equipment, conditions that will deteriorate over time in the absence of adequate logistics management. An assessment of the impact of interventions during the 1994-1998 period is thus more precise when the new SDPs are excluded from analysis. The quality of services actually delivered, assessed through observations and structured interviews, is not assumed to naturally decline over time. Thus, the inclusion of new SDPs in the evaluation of service quality should not bias results upward, but should accurately reflect the quality of reproductive health services available in the public sector.

Table 1a displays the distribution of all SDPs visited during the Situation Analysis studies, by region and level of SDP.

[1] The only municipality selected for the 1991-92 DHS but not visited during the Situation Analysis study was Mascote as no reproductive health services were available in the area.

Table 1a *Distribution of All SDPs Visited, by Region and Level of SDP*

	Salvador		Interior		Bahia (Total)	
	1994	1998	1994	1998	1994	1998
Hospitals	25	20	58	56	83	76
Health Centers	50	52	85	84	135	136
Health Posts	10	2	48	20	58	22
Total	85	74	191	160	276	234

Table 1b displays the distribution of the 208 SDPs that were visited twice, in both 1994 and 1998 (i.e., excluding the 68 facilities that closed during the study period and 26 new facilities opening after 1994), and the distribution of SDPs that received targeted reproductive health interventions during the previous four years (see below).

Table 1b *Distribution of SDPs Visited in both 1994 and 1998, by Region and Level of SDP*

	Salvador		Interior		Bahia (Total)		Intervention
	1994	1998	1994	1998	1994	1998	Received
Hospitals	20	18	52	53	72	71	15
Health Centers	42	47	67	78	109	125	58
Health Posts	4	1	23	11	27	12	0
Total	66	66	142	142	208	208	73

In both Salvador and the interior of the state, the number of SDPs classified as hospitals[2] remained relatively constant. The number of facilities classified as health posts dropped considerably due to two factors: nearly half of the units that closed between 1994-98 (31 of 68 SDPs) were health posts; and several health posts were re-classified as health centers during the study period, in accordance with SESAB's current policy of categorizing ambulatory facilities providing medical attention on a daily basis as centers, rather than posts.

Of the 208 SDPs visited in both 1994 and 1998, 73 (or 35 percent) were targeted for family planning interventions through SESAB's *Reproductive Health Project* in the areas of service organization, personnel training, and monitoring of contraceptive logistics and supervision. SDPs receiving targeted interventions were selected based on the interest of municipal health officials, the availability of health personnel able to participate in

[2] In general, facilities with beds are classified as hospitals, including *maternidades*, *unidades mistas de saúde*, and *casas de parto*; clinics and polyclinics are classified as health centers.

additional family planning training, and if they had the minimum physical infrastructure and equipment needed for offering family planning.

Wherever convenient, trend analysis will be presented for all SDPs, which have received increased support from SESAB in the area of reproductive health during the past four years, followed by distributions for the 73 facilities that received the greatest investments from SESAB through targeted interventions.

Data Collection

Fieldwork was carried out by twelve teams trained in the collection of inventory data, clinical observation, and structured interviews. A team of two fieldworkers, typically composed of a nurse and a social worker, visited each SDP. Fieldworkers received 10 days of training in both 1994 and 1998. Each training consisted of: an explanation of the objectives of the study and of each questionnaire item; a review of guidelines and techniques for conducting observations and interviews; role-plays with simulated clients; and practice applications of all instruments in SDPs in Salvador. For both studies, 24 interviewers and four field supervisors were selected. Data collection was completed in approximately seven weeks. The five instruments implemented at each SDP in both 1994 and 1998 are described below.

Inventory of Human and Material Resources

This instrument is designed to measure the readiness of an SDP to provide RH (Reproductive Health) services through an inventory of all functioning equipment, contraceptive stocks, and other consumable supplies, together with a performance assessment of various subsystems including staffing, IEC activities, logistics management, supervision, and record-keeping.

Structured Interview Module for RH Providers

SDP personnel providing reproductive health services on the day the SDP was visited were interviewed to assess their training, knowledge, attitudes, and practices with respect to family planning, gynecological, and prenatal care. These interviews were usually performed by fieldworkers with medical training.

Observation Guide for Interaction between RH Clients and Service Providers

A nine page observation guide, covering family planning, gynecological, and prenatal visits, was used to record the information exchanged between providers and clients and all procedures and exams performed during reproductive health consultations. Between one and six reproductive health consultations were usually observed in a day of service delivery and were completed by fieldworkers with medical training.

Exit Interview with RH Clients

This interview module was used to help assess whether essential information was effectively communicated to family planning, gynecology, and prenatal clients, and to measure client satisfaction with services received. All clients whose consultations had been observed were invited to participate in the exit interview immediately after the conclusion of the RH visit.

Interview Module for Non-Users of Reproductive Health Services

On the day each study facility was visited, clients seeking services unrelated to reproductive health, and who had not used RH services during the past 12 months, were interviewed to assess their awareness of and attitudes toward family planning, gynecological and prenatal services (if appropriate).

Table 2 presents the number of clinical observations and interviews completed during each study.

Table 2 *Number of Observations and Interviews Completed during 1994 and 1998 Situation Analysis Studies*

	Observations of RH Consultations		Provider Interviews		Exit Interviews with RH Clients		Interviews with Non-RH Clients	
	1994	1998	1994	1998	1994	1998	1994	1998
Salvador	397	273	149	105	392	271	259	250
Interior	630	513	211	160	633	515	516	493
Total	1027	786	360	265	1025	786	775	743

IV. RESULTS

Availability of Reproductive Health Services

SDP managers were asked about the availability of several types of reproductive health services at their facility. The proportion of SDPs that reported offering family planning, general gynecological services, Pap smears, prenatal care, or STD services at least one half-day per week is presented in Table 3.

Table 3 *Percentage of SDPs Offering Reproductive Health Services, 1994-98*

	Salvador N=66						Interior N=142						Bahia N=208						Interven. N=73	
	H		C & P		VI. TOTAL		H		C & P		VII. TOTAL		H		C & P		TOTAL			
	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98
FP	65	78	74	77	71	77	33	32	33	48	33	42	42	44	47	58	45	53*	71	95***
GYN	95	89	96	85	96	86	92	91	67	72	76	79	93	90	77	77	82	81	88	80
Pap Smears	85	67	54	48	64	53	65	70	38	36	48	49	71	69	43	40	53	50	66	56
Prenatal Care	75	83	91	85	86	85	87	87	79	84	82	85	83	86	83	85	83	85	92	85
STD Services	35	39	28	13	30	20	33	32	26	28	28	30	33	34	27	23	29	26	26	30
FP,GYN & PN offered	50	56	74	65	67	62	33	32	29	37	30	35	38	38	44	47	42	44	67	71

McNemar Test for Significance of Change: ***p< .001; *p =.05;

H=Hospitals, C & P=Centers & Posts; Interven.= SDPs receiving targeted interventions;

FP=Family Planning; GYN=General Gynecology; PN=Prenatal Services

The availability of family planning services increased significantly during the study period, from 45 to 53 percent of all SDPs, with the greatest change registered among SDPs receiving targeted interventions from the *Reproductive Health Project*. Hospitals in the interior were the only sub-group not to show an increase in family planning availability. Among SDPs offering family planning, the median frequency of service availability was 2.5 days per week in both 1994 and 1998.

General gynecological and prenatal services were available in over 80 percent of SDPs in both years, with little change in the median frequency of service availability (offered three and 2.5 days per week in 1998, respectively). However, only half of SDPs reported that Pap smears were available, with no improvement seen in either region nor among intervention SDPs. There was also no significant change in the proportion of facilities offering STD screening or treatment, available in only one-fifth of SDPs in Salvador and less than one third

of facilities in the interior. Forty-four percent of facilities offered family planning, general gynecology, *and* prenatal services in 1998, without significant change during the study period.

Some progress was made toward reducing the urban-rural gap in service availability, although large differences separating the Salvador metropolitan area and the interior remained in the area of family planning.

The percentage of all SDPs reportedly offering contraceptives to clients in 1998 is displayed in Table 4.[3] SDP managers were not asked about the specific methods offered at their facilities in 1994, so it is not possible to analyze change during the study period.

Table 4 *Percentage of All SDPs Reporting Delivery of Contraceptive Methods, 1998*

VIII.		*Salvador**** *N=66*			*Interior* **N=142**			*Bahia* **N=208**			
		H	*C&P*	**All Levels**	*H*	*C&P*	**All Levels**	*H*	*C&P*	**All Levels**	**Interven. N=73**
IX.	***Natural Methods:***										
X.	Calendar method or Billings	67	83	**79**	42	47	**45**	48	60	**56**	**92*****
XI.	Lactational Amenorrhea	67	83	**79**	49	49	**49**	54	61	**59**	**92*****
Barrier Methods:											
Condoms		72	71	**71**	19	44	**35**	32	53	**46**	**92*****
XII.	Spermicides	67	48	**53**	11	29	**23**	25	36	**32**	**77*****
XIII.	Condoms & Spermicides	67	48	**53**	11	29	**23**	25	36	**32**	**77*****
XIV.	Diaphragms	56	31	**38**	11	28	**22**	23	29	**27**	**63*****
XV.	***All Other Modern Methods:***	72	73	**73**	21	48	**38**	34	57	**49**	**93*****
XVI.	Pills										
XVII.	Injectables	33	13	**18**	8	11	**10**	14	12	**13**	**23*****
IUDs		72	48	**55**	17	30	**25**	31	37	**35**	**73*****
XVIII.	Female Sterilization	39	0	**11**	51	3	**21**	48	2	**18**	**12**
XIX.	Vasectomy	44	0	**12**	43	5	**19**	44	3	**17**	**12**
Emergency Contraception ("Morning after Pill")		17	4	**8**	2	1	**1**	6	2	**3**	**6**

Contingency Coefficient used to test for significance of differences between all SDPs and Intervention SDPs: ***p< .001; Differences between Salvador and the interior were statistically significant for oral contraceptives, condoms, spermicides, the IUD, and natural methods (*Contingency Coefficient,* ***p< .001).

[3] Data in Table 4 are based on managers' reports about the range of methods offered at their facilities. They do not necessarily imply the availability of contraceptive stocks or SDP readiness to deliver methods, which are presented in subsequent sections.

Natural methods of contraception were reportedly offered at more facilities than any other type of method. Oral contraceptives and condoms were offered at over two-thirds of SDPs in Salvador, compared with just over a third of SDPs in the interior. Within the interior of the state, both methods were available in more than twice as many centers and posts than hospitals. Pills and condoms were offered at nearly all 73 intervention facilities.

Spermicides were offered far less often than condoms, with more than twice as many urban as rural SDPs reporting that they offered the method (53 and 23 percent respectively). A similar pattern was seen with respect to IUDs: 55 percent of urban SDPs reported offering the IUD, compared to 25 percent of SDPs in the interior.

The only methods offered more widely in the interior than in the Salvador metropolitan area were female and male sterilization. Intervention SDPs were significantly more likely to report offering any temporary method of contraception (with the exception of emergency contraception) when compared with all 208 SDPs surveyed.

The use of oral contraceptive pills for emergency contraception was introduced into Ministry of Health (MOH) norms in 1996. Although a low percentage of SDPs reported offering emergency contraception in 1998, it appears that considerable progress has been made toward its introduction in the Salvador metropolitan area, where 17 percent of hospitals reported offering the "Morning after Pill".

IEC Materials

Increasing the accessibility and effectiveness of RH services is directly related to the availability of IEC materials used to promote reproductive health, particularly when services are new to the facility as is often the case with family planning and STD screening or treatment. The proportion of SDPs with stocks of pamphlets or a flipchart covering specific areas of reproductive health is displayed in Table 5.

Table 5 Percentage of SDPs with IEC Materials, 1994-98

	Salvador **N=66**		*Interior* *N=142*		*Bahia* **N=208**		**Interven. N=73**	
	1994	**1998**	**1994**	**1998**	**1994**	**1998**	**1994**	**1998**
Family Planning	77	79	30	37	45	51	74	96***
Cervical/ Breast Cancer Prevention	21	44**	9	25***	13	31***	19	45***
Prenatal Care	38	47	22	35*	27	39**	37	56*
STDs/AIDS	35	59**	16	29**	22	39***	29	60***

McNemar Test for Significance of Change: ***p< .001; **p<. 01; *p<. 05;
Note: IEC Materials = Flipchart and/or pamphlets in stock at time of survey;

The percentage of all SDPs with IEC materials increased significantly for each area evaluated, with the exception of family planning. However, nearly all intervention facilities had family planning IEC materials in stock in 1998 (a significant increase since 1994), compared with just over half of SDPs in general.

The availability of materials covering the importance of Pap smears or how to perform self-breast exams more than doubled among all SDPs, with significant increases in both regions. The percentage of SDPs with materials on STDs or AIDS also increased significantly in both regions, as did the availability of prenatal materials in the interior. Yet less than 40 percent of all SDPs had IEC materials covering any one of these three areas in 1998.

The percentage of SDPs offering a specific RH service *and* with the relevant IEC materials in stock increased significantly in all areas except STDs/AIDS, an area where service availability remained stagnate over the study period. Among the 73 intervention SDPs, significant increases were registered in all four areas evaluated, with family planning services and accompanying IEC materials universally available in 1998. Yet gynecological and STD services and materials still were not widely available among intervention SDPs and much less available among all SDPs in general.

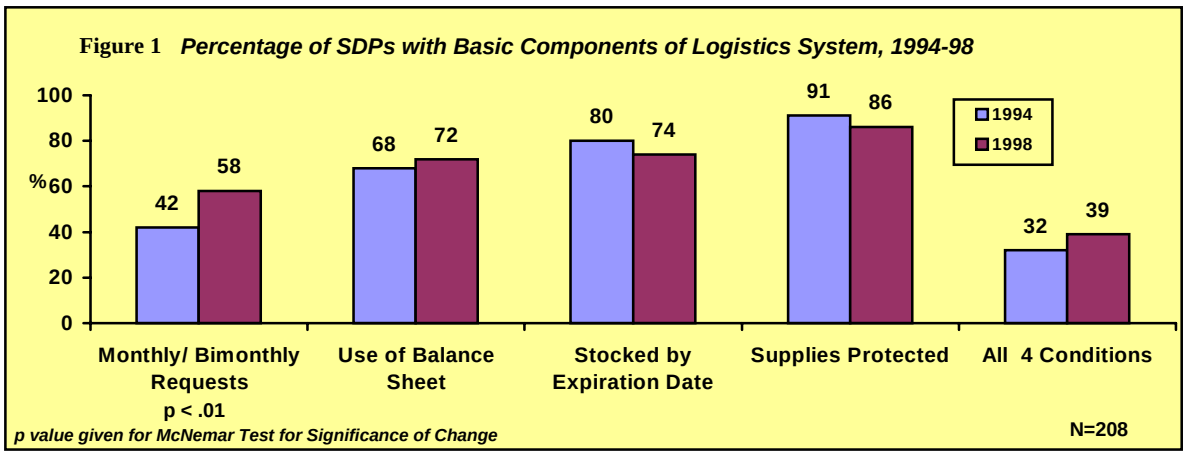
Table 6 *Percentage of SDPs Offering RH Services and with Relevant IEC Materials in Stock*

	Salvador **N=66**		*Interior* *N=142*		*Bahia* **N=208**		**Interven.** *N=73*	
	1994	**1998**	**1994**	**1998**	**1994**	**1998**	**1994**	**1998**
Family Planning	64	74	20	30*	34	44**	63	95***
Cervical/ Breast Cancer Prevention	21	39*	9	19**	13	26***	18	36*
Prenatal Care	36	44	19	32*	25	36*	34	51
STDs/AIDS	14	14	8	14	10	14	8	23*

McNemar Test for Significance of Change: ***p< .001; **p<. 01; *p<. 05

Logistics Management

The functioning of logistics systems was analyzed in terms of both process and output indicators. There was significant improvement in one of the four process indicators between 1994 and 1998, as shown in Figure 1.



Of the four process indicators presented in Figure 1, the first two relate directly to the probability of stockouts, while the second two relate to the likelihood of stock wastage. The percentage of SDPs ordering consumable supplies at regular intervals (monthly or bimonthly) increased significantly in Salvador (from 47 to 73 percent of SDPs), while smaller (insignificant) gains were registered in the interior (from 40 to 51 percent of SDPs). Reported use of a stock balance sheet increased among centers and posts in the interior (see appendix Table A.1), while the percentage of facilities stocking supplies according to expiration date decreased slightly among rural SDPs of all levels. Although stocks were not more likely to be

protected from exposure to direct light or moisture in 1998, most SDPs were storing supplies under adequate conditions in both years (91 percent in 1994 and 86 percent in 1998). The proportion of SDPs meeting all four conditions did not increase significantly during the study period. Significant gains were made among intervention SDPs: 34 percent of these facilities met all four conditions in 1994 compared with 63 percent in 1998 (see Table A.1).

The principal outcome indicator for logistics system functioning is the frequency of reported stockouts. Table 7 displays the percentage of SDPs (with the relevant services) reporting stockouts of contraceptive methods, iron supplements, tetanus toxoid, and antiseptic solution in the two months prior to the survey in 1994 and 1998.

Table 7 *Percentage of SDPs Reporting Stockouts during Two Months prior to Survey, 1994 and 1998*

	Salvador						Interior						Bahia						Interven.	
	H		C & P		TOTAL		H		C & P		TOTAL		H		C& P		TOTAL		TOTAL	
	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98
Pills	8	31	38	37	30	35	15	50	35	21	28	26	12	38	37	29	29	31	29	27
Condoms	15	31	38	60	32	52*	15	88	29	61	24	65*	15	52	35	60	29	59***	25	59**
Spermicides	8	42	36	46	28	45	15	57	30	12	25	22	12	47	34	30	27	35	26	28
Diaphragms	15	22	23	28	21	26	8	17	32	8	23	9	12	20	26	16	22	17	16	11
IUDs	8	15	38	27	30	23	14	25	26	11	22	14	11	19	33	19	26	19	25	21
Injectables	---	43	---	60	---	53	---	25	---	36	---	33	---	36	---	48	---	44	---	41
Iron Pills	43	27	66	45	60	41	26	38	57	54	44	48	30	35	60	50	50	45	60	32*
Tetanus Toxoid	15	40	23	26	21	29	30	14	16	20	21	19	26	25	19	22	21	23	23	17
Antiseptic Solution	NA	11	NA	24	NA	20	NA	8	NA	19	NA	14	NA	9	NA	21	NA	16	NA	18

Contingency Coefficient: ***p< .001; **p< .01; *p< .05
--- = Not applicable; NA = Data not available for 1994

Note: Contraceptive stockouts were calculated for SDPs offering family planning services (83 SDPs in 1994 and 94 in 1998). Stockouts of iron supplements and tetanus toxoid are presented for SDPs offering prenatal care (149 in 1994 and 128 in 1998). Stockouts of antiseptic solution were calculated for all 196 SDPs with available data.

The percentage of SDPs reporting stockouts in 1994 and 1998 fluctuated by commodity with little overall change. However, there was a large and significant increase in the proportion of SDPs reporting condom stockouts (103 percent increase among all SDPs and 136 percent increase among intervention SDPs). The sharp increase in condom stockouts was at least partially due to insufficient acquisition and distribution of the method by the national Ministry of Health in 1997.

Among intervention SDPs, condoms were the only item more frequently stocked out in 1998 than in 1994, and the proportion of SDPs reporting stockouts in iron supplements declined significantly (from 60 to 32 percent).

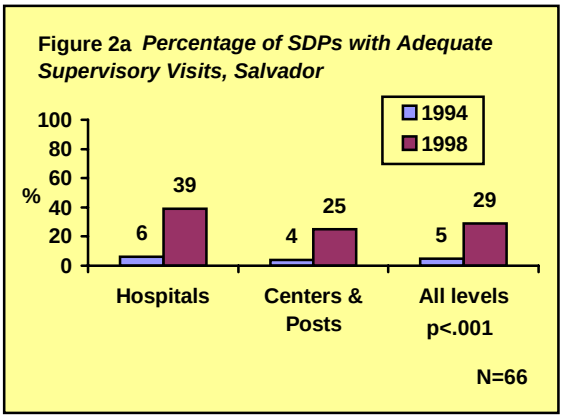
SDP Record Keeping and Supervision

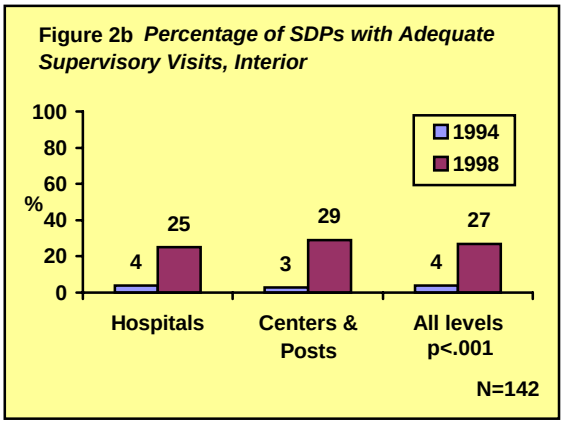
Large improvements were made in record keeping between 1994 and 1998. In both Salvador and the interior, the proportion of SDPs maintaining records for family planning gynecology, and prenatal services increased significantly, with nearly half of all SDPs maintaining family planning records and over 60 percent maintaining gynecological and prenatal records in 1998 (see Table A.2).

The percentage of all facilities maintaining organized records for purposes of client follow-up and quality control increased from 17 percent in 1994 to 77 percent in 1998, with large gains in both regions. Impressive gains were also made among intervention SDPs: 88 percent of all facilities were maintaining organized records for purposes of client follow-up in 1998, up from only 25 percent in 1994.

Two criteria were used to evaluate the adequacy of supervision: 1) the frequency of visits by supervisors, and 2) the types of activities performed during supervisory visits. The percentage of SDPs reporting regular supervisory visits increased significantly in both regions, rising from 17 to 38 percent of all SDPs at the state level (see Table A.3). There was no difference in the probability of an SDP receiving regular supervisory visits by intervention status.

A supervisory visit was considered minimally adequate if at least three of the following five activities were performed: observation of service delivery; questions asked about problems in SDP functioning; suggestions made to resolve problems; clinic records examined; and praise given for improvements. Figures 2a and 2b display the percentage of all SDPs receiving regular supervisory visits of adequate content, by level of SDP and region.





Large improvements in the percentage of SDPs receiving regular supervision of adequate content occurred among all types of SDPs in both regions. In 1994, less than one quarter of all supervisory visits met three or more of the conditions given above. In 1998, 74 percent of all visits met the same conditions. Yet continued attention to the area of SDP supervision is needed: only 28 percent of all SDPs in Bahia received regular supervision of adequate content in 1998.

Service Readiness and Quality of Care:

Family Planning, Gynecology, and Prenatal Services

Data from the inventory module were used to evaluate the readiness (or potential) of SDPs to provide reproductive health services in terms of personnel, medical equipment, and consumable supplies. Observations were used to assess the quality of care currently available, in terms of the information exchange between providers and clients, and providers' technical competence. Service readiness and quality of care are presented by type of RH service: family planning, gynecology, and prenatal care.

A1. Family Planning Service Readiness

While the proportion of facilities that report offering a service to their clientele is an important variable for measuring change over time, the true availability of a service depends on several additional supply-side factors. With respect to family planning services, the availability of contraceptive stocks is of primary importance and is often the most limiting factor in settings where programs are relatively new or during periods of service expansion. Second, a trained provider must be present to screen potential users for contraindications, provide information regarding method usage and likely side effects, and distribute supplies. Certain types of medical equipment are also needed, such as speculums, ring forceps and tenaculums for IUD insertions, or stethoscopes and blood pressure gauges for following users of hormonal methods. And finally, additional consumable supplies, such as antiseptic solution and gauze, are required for the safe delivery of some methods. The following table presents lists of essential items for the delivery of six methods. The lists of required items should be considered minimum preparation, meaning that if any item is missing, the SDP is not prepared to safely deliver the method in question. The

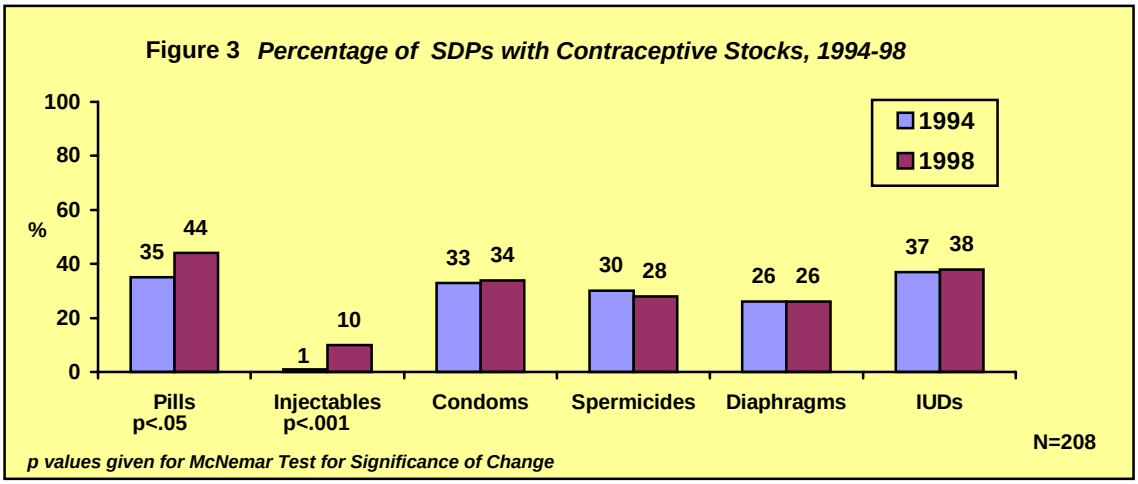
availability of essential items is reviewed below for all 208 SDPs visited in both 1994 and 1998.

Table 8 *Minimum Preparation to Deliver Contraceptive Methods*

	Condoms/ Spermicides	Pills	Injectables	Diaphragm	IUD*
Personnel	MD, nurse, or auxiliary nurse	MD or nurse	MD or nurse	Gynecologist or Obstetrician	MD or nurse
Equipment	None	Stethoscope, BP gauge, adult scale	None	GYN exam table, speculum, sterilization equipment	GYN exam table, speculum, ring forceps, tenaculum, scissors, sterilization equipment
Consumable Supplies	Method stock	Method stock	Method stock, alcohol, cotton	Method stock, gloves	Method stock, gloves, antiseptic solution, gauze

*Throughout this report, preparation to deliver IUDs is presented for hospitals and centers only.

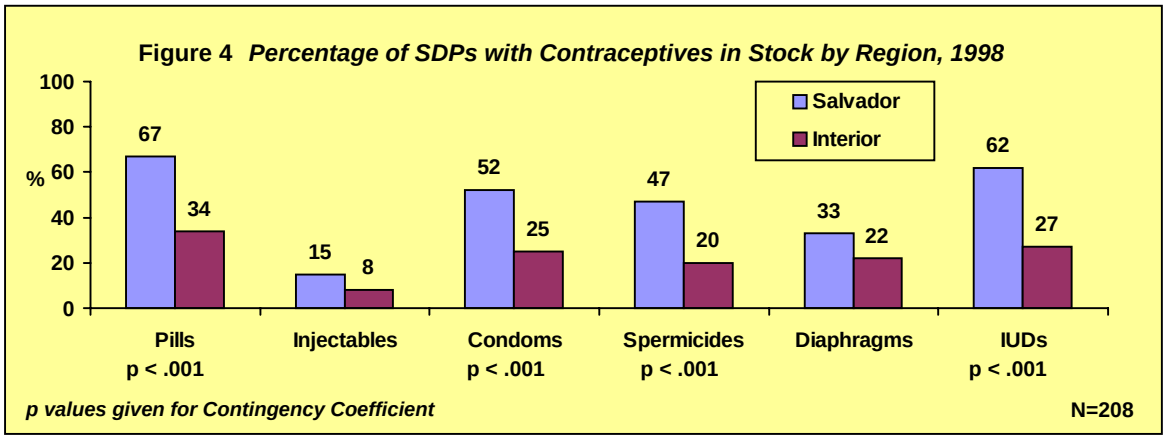
An evaluation of SDPs by availability of contraceptive stocks produced mixed results. The proportion of SDPs with stocks of oral contraceptives increased significantly from 35 percent of SDPs in 1994 to 44 percent in 1998. And following the Brazilian Ministry of Health's approval of Depo-Provera in 1996, the availability of injectables reached ten percent of all SDPs in 1998. However, there was no statistically significant change in the availability of any other method, except the diaphragm that *decreased* significantly among SDPs in Salvador (from 52 percent in 1994 to 33 percent in 1998) (see Table A.4).



Among intervention SDPs, oral contraceptives and injectables were again the only methods that underwent a significant increase in availability.

The percentage of SDPs with all appropriate methods4 in stock decreased slightly at the state level (from 21 to 16 percent), reflecting a sharp drop in Salvador (from 41 to 26 percent) due to decreased availability of all barrier methods (see Table A.4). The proportion of rural SDPs with all methods in stock showed no change during the study period (12 percent in both years), although small (statistically insignificant) increases were registered for several method stocks.

Figure 4 compares method availability in 1998 by region. Significant regional differences are evident for all methods except injectables and diaphragms.

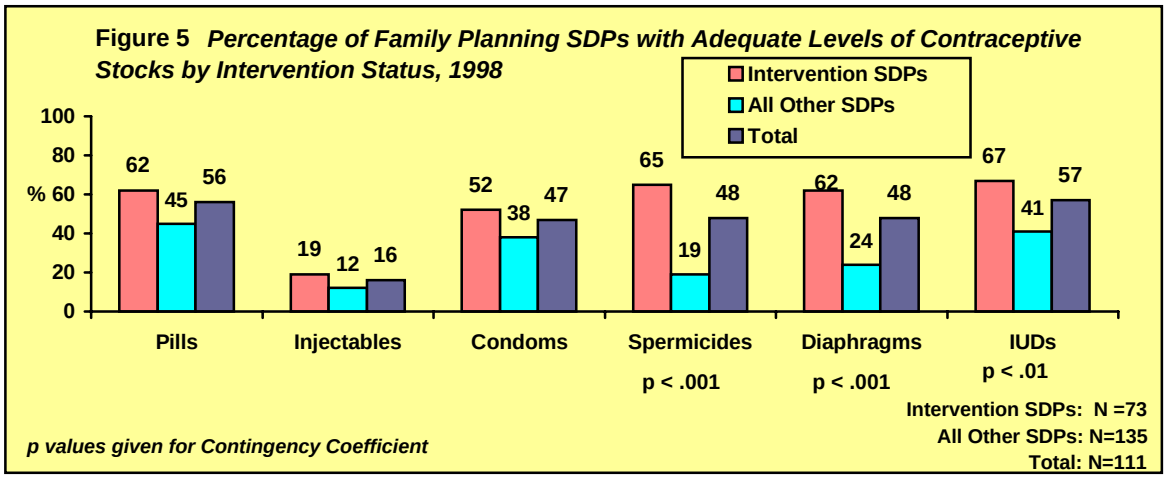


Nevertheless, the urban-rural gap in method stocks decreased for all six methods during the study period.

Beyond the simple availability of supplies, the adequacy of stock levels can be estimated by comparing the monthly average of methods distributed by a given facility against the quantity in stock on the day the facility is visited. Figure 5 presents the percentage of SDPs offering family planning with contraceptive stocks equal to or greater than their monthly demand in 1998. Facilities stocked out of a method on the day they were visited were judged to have an inadequate supply of that method, irrespective of their

4 All appropriate methods for hospitals and centers refer to pills, condoms, spermicides, diaphragms, and IUDs; for health posts, appropriate methods are pills, condoms, spermicides, and diaphragms. Injectables were excluded from this calculation due to the limited time they have been available.

monthly demand.5



Results indicate that roughly half of all SDPs offering family planning have sufficient quantities of contraceptives on hand to provide reasonable protection against stockouts. (Only 16 percent of SDPs have adequate stocks of injectables, reflecting the recent introduction of the method.) SDPs targeted for intensive interventions by SESAB were significantly more likely to have adequate stocks of spermicides, diaphragms, and IUDs when compared against all other SDPs offering family planning.

The availability of an appropriate provider was not an important factor limiting the delivery of any method (see Table A.5), except the diaphragm for which a gynecologist or obstetrician is needed (see Table A.6).6 Nearly 90 percent of all SDPs in Salvador and hospitals in the interior had an Ob/Gyn (obstetrician and/or gynecologist) on staff in 1998, compared to 60 percent of centers and posts in the interior.

With regard to medical equipment, over 85 percent of all SDPs in both regions had stethoscopes, blood pressure gauges, and adult scales in their facilities in 1998, with significant increases in all three items in the interior (see Table A.6). Over 90 percent of all facilities had sterilization equipment or supplies on hand, with the exception of hospitals in Salvador, where availability fell from 95 percent in 1994 to 72 percent in 1998.

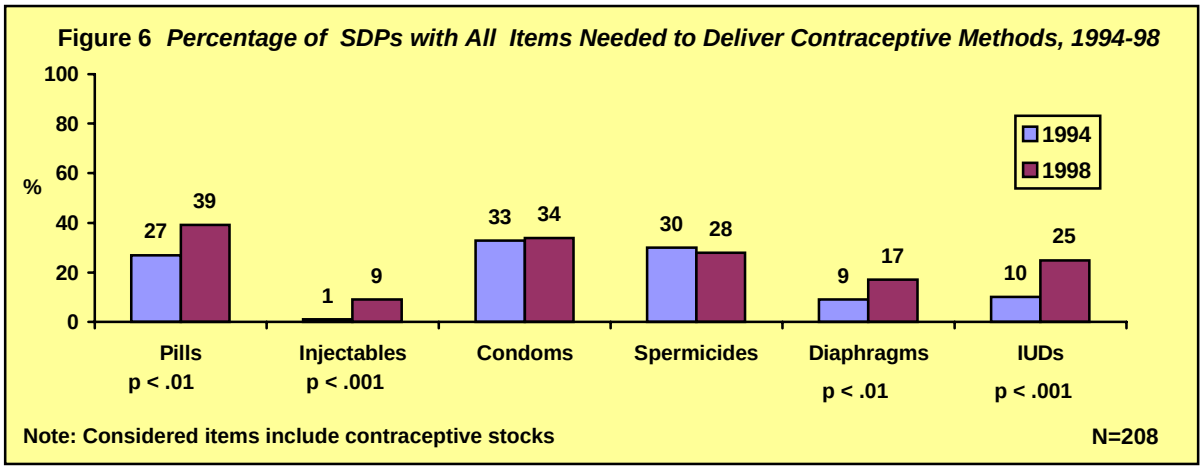
5 SDPs without a method on hand and a recorded monthly demand of *zero* were still considered to have inadequate stocks. In such situations, SDPs offering family planning are expected to stock small quantites of infrequently requested methods (e.g., one to two diaphragms or IUDs).

6 Although MOH regulations do not require that a diaphragm be fitted by a gynecologist or obstetrician, they are the only providers who have been trained to offer the method.

Approximately 15 percent of SDPs did not have GYN exam tables or speculums in 1998, with no change during the study period. Over one quarter of rural centers and posts lacked one or both items. While there was not a significant increase in the availability of instruments needed to perform IUD insertions, small gains were registered in the availability of tenaculums (from 58 percent of SDPs in 1994 to 64 percent in 1998) and ring forceps (from 67 to 72 percent of SDPs).

The availability of consumable supplies (other than contraceptive stocks) does not appear to be a limiting factor for family planning service readiness as approximately 90 percent of SDPs had gloves, antiseptic solution, cotton, and gauze in stock in 1998.

Bringing together contraceptive stocks with the other items required for the delivery of a method (see Table 8) produces a more accurate picture of method availability than a consideration of contraceptive stocks alone.



The percentage of SDPs adequately prepared to deliver oral contraceptives, injectables, diaphragms, and IUDs increased significantly. Increases in the percentage of SDPs prepared to deliver diaphragms and IUDS were due to greater availability of medical equipment, rather than increases in method stocks (see Figure 3). There was no improvement in the availability of condoms or spermicides.

A similar pattern of improvement was evident among intervention SDPs, but with a higher percentage of SDPs prepared to deliver each method (Figure 7).

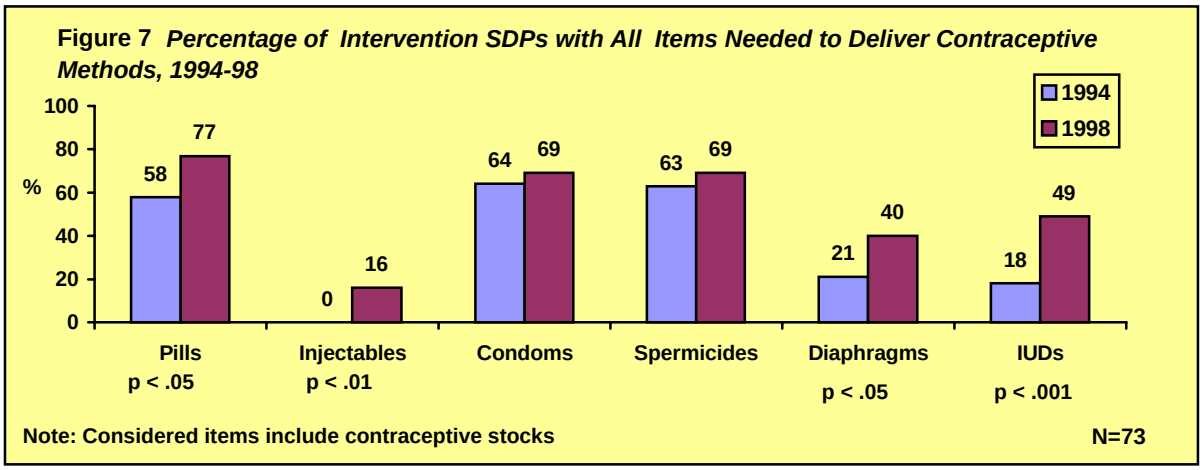
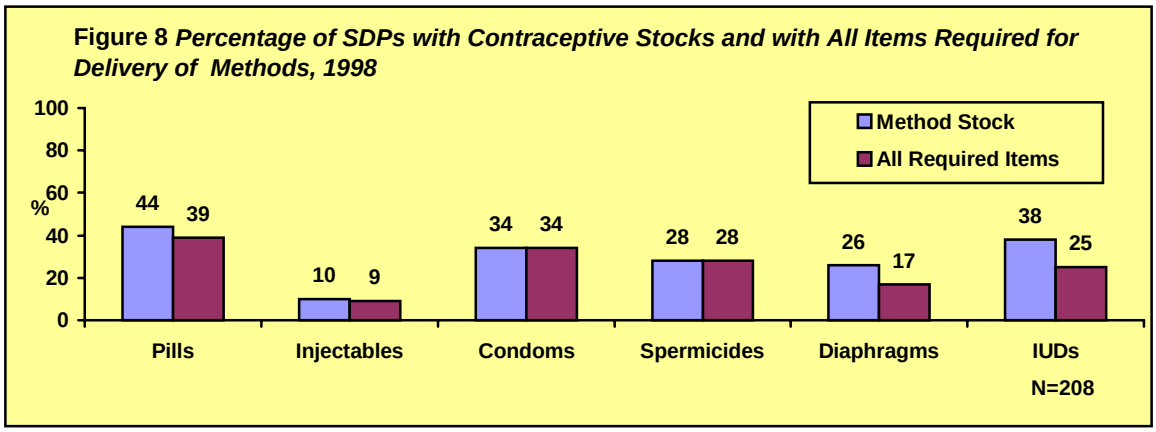


Figure 8 compares the percentage of all SDPs with contraceptive stocks against the percentage having all required items in 1998. The greatest difference between method availability and SDP readiness to deliver the method is seen with respect to the diaphragm (requiring a specialized provider, speculum and exam table) and the IUD, the most demanding method in terms of medical equipment and consumable supplies. Consequently, the true availability of both methods decreases by approximately 35 percent when all items needed for delivery are considered.[7]



In 1994, only five percent of all SDPs were prepared to deliver all appropriate methods, rising to ten percent in 1998. Among intervention SDPs, the percentage prepared to deliver all methods rose from 11 to 21 percent.

[7] See Table A.7 for a break down by level of SDP and region.

To assess current levels of family planning activity and the adequacy of contraceptive stocks, service statistics were collected on the number of new and continuing family planning clients attended and supplies distributed during the three months prior to the survey. Average stock levels are also presented so that supply and demand levels can be compared.

Table 9 *Mean Number of Contraceptives in Stock & Distributed per Month, 1998*

	Hospitals N=71			**Centers and Posts N=137**			**All Levels N=208**			**Interven. SDPs N=73**		
	Avg. # in Stock	Avg. # Dist.	Avg. # of Users	Avg. # in Stock	Avg. # Dist.	Avg. # of Users	Avg. # in Stock	Avg. # Dist.	Avg. # of Users	Avg. # in Stock	Avg. # Dist.	Avg. # of Users
Pill Cycles	137	49	28	158	64	38	151	59	34	286	144	80
Injectables	17	8	8	5	2	2	9	4	4	18	3	3
Condoms	556	249	24	254	293	22	357	278	23	721	649	50
Spermicides	73	8	5	22	4	2	39	5	3	52	11	4
Diaphragms	6	0	0	4	0	0	5	0	0	5	0	0
IUDs	15	11	11	6	1	1	10	5	5	17	6	7

Dist. = Distributed
Note: The 12 health posts were excluded from the IUD distributions.

Figures in Table 9 confirm that the majority of contraceptive users attended in public sector facilities receive either pills or condoms. It is also worth noting that the average number of condoms distributed exceeded the average number of condom stocks for centers and posts, corroborating the increase in stockouts presented in Table 7. Hospitals perform nearly all IUD insertions, even though health centers are authorized to offer the method, and it appears that diaphragms are essentially not delivered in public SDPs, including the 73 intervention facilities. Service statistics also indicate that the total number of family planning clients attended per month does not vary greatly by level of SDP (76 clients for hospitals and 65 for centers and posts).

Intervention facilities supply more than twice as many pill and condom users than any other type of SDP.

A.2 Information Exchange between Family Planning Providers and Clients

The completeness of the information exchange during a reproductive health consultation is of concern in terms of both client satisfaction and service efficacy (e.g., a contraceptive user who understands how to use her method and manage potential side effects,

or a prenatal client who is well informed about nutrition and danger signs during pregnancy). The adequacy of the information exchanged between provider and client was evaluated by type of visit. For instance, a provider is not expected to take a client's medical history during a contraceptive re-supply visit, but is expected to do so during the client's first family planning visit.

The following pie charts display the distribution of family planning clients observed in 1994 and 1998 by purpose of visit.

Figure 9a ***Distribution of Family Planning Clients by Purpose of Visit, 1994***

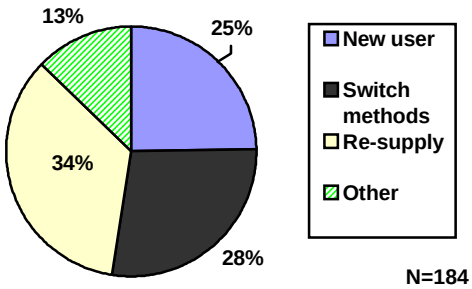
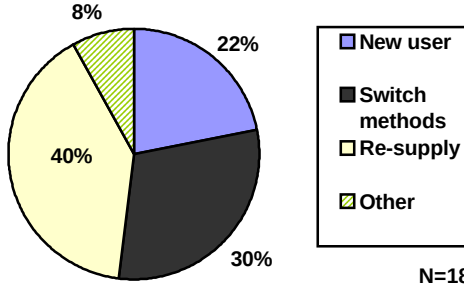
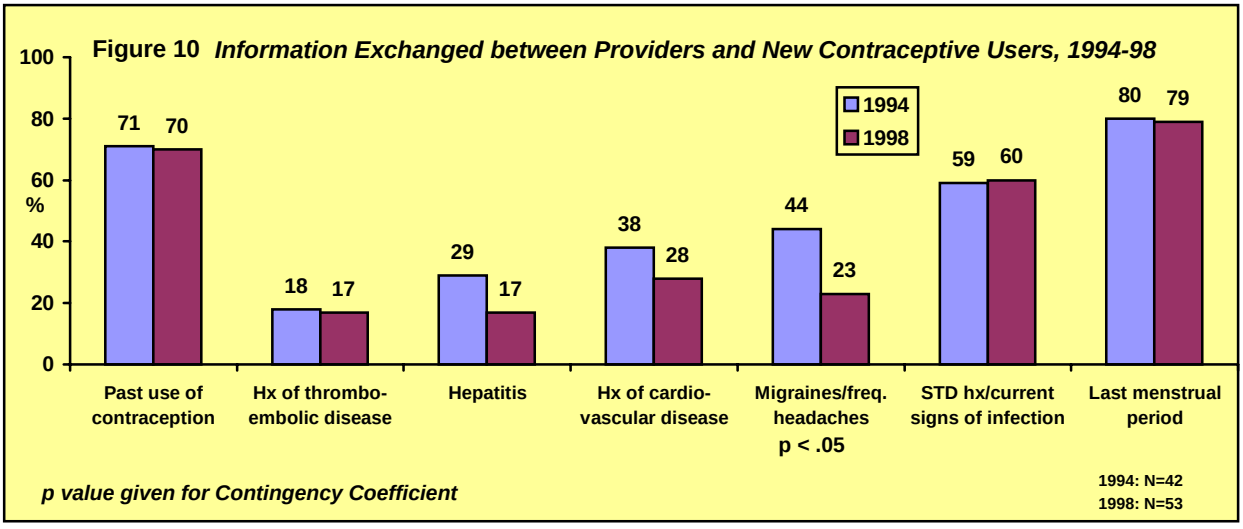


Figure 9b ***Distribution of Family Planning Clients by Purpose of Visit, 1998***



There was very little change in the distribution of family planning clients by purpose of visit, with re-supply visits accounting for the largest proportion of consultations in both years, followed by visits aimed at resolving problems with a current method. First-time contraceptive users and women wanting to reinitiate contraceptive use accounted for approximately one quarter of all visits observed.

The information exchanged between a provider and a client seeking a new method of contraception should include: a discussion of any methods she may have used in the past; a ruling out of absolute contraindications for hormonal methods and the IUD; and a confirmation of where the client is in her menstrual cycle so that precise instructions may be given about when to initiate method use. Figure 10 displays the percentage of visits with new family planning users during which essential information was exchanged between provider and client in 1994 and 1998.



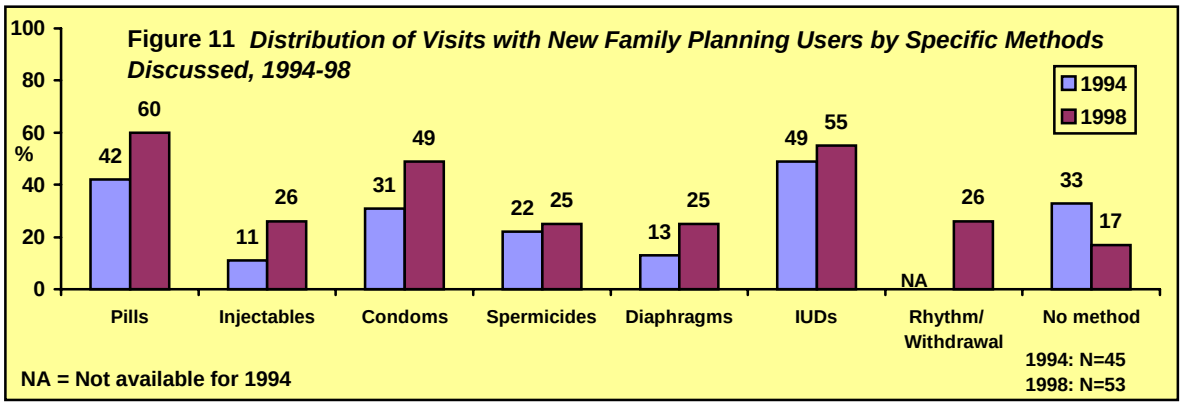
Hx = History

Results presented in Figure 10 suggest that the basic exchange of information between providers and new family planning users is not improving. Specifically, far less than half of all providers observed in either year obtained medical history information that could contraindicate use of hormonal methods, and the proportion of providers asking clients about migraines or frequent headaches decreased significantly. There were significant differences in the adequacy of the information exchange by region, with providers in the interior performing far better than their counterparts in Salvador (not shown).

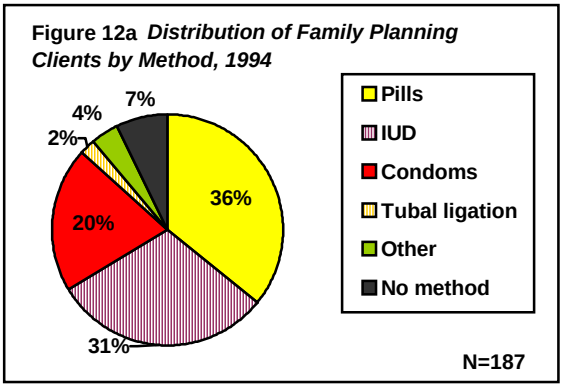
Many family planning providers are missing opportunities to provide additional services that clients may need. In 1998, only 53 percent of family planning providers asked clients about the date of their last Pap smear (1994 figures not available).

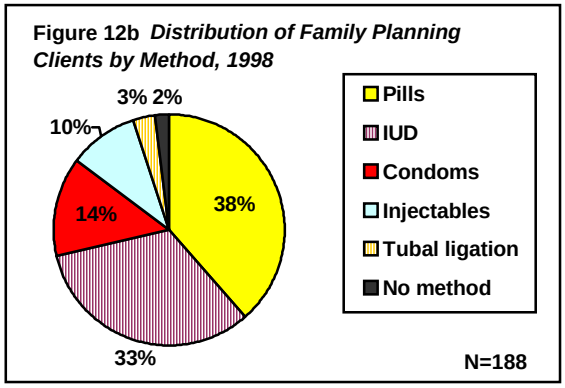
To help ensure that clients are receiving their method of choice, providers are expected to discuss contraceptive alternatives with new clients. In 1994, 29 percent of new users were informed about three or more methods by their provider, increasing to 40 percent in 1998. The proportion of visits during which at least *two* methods were discussed also increased significantly, from 40 percent in 1994 to 60 percent in 1998. During the study period, the median number of methods discussed with new users rose from one to two methods, indicating that some form of contraceptive choice is now presented in the majority of consultations.

It can be argued that new clients with previous contraceptive experience and with a preference for a specific method do not need (and may not desire) a full orientation about contraceptive alternatives. While the Situation Analysis observation guide did not allow the observer to discrimate between new clients who have already made an informed decision about a method prior to their consultation and those who have not, the number of methods discussed with new clients may be taken as a general indicator of provider-client communication regarding contraception. The following bar chart presents the probability of each method being discussed with a new user, as well as the proportion of new users who were *not* informed about *any* specific method during their visit.



The probability of a provider discussing condoms as a contraceptive option seemed to increase during the past four years, although the change was not statistically significant (*Contingency Coefficient*, p = .07). There was a slight decrease in the proportion of family planning clients using condoms between 1994 and 1998 (Figures 12a and 12b), apparently due to method supply problems, rather than to a lack of information given to clients. The percentage of visits with new users that included a discussion of injectables also seemed to increase during the study period (although the change was not statistically significant), while the proportion of clients actually selecting injectables rose from zero to ten percent (Figures 12a and 12b).





The proportion of visits during which the provider failed to discuss specific methods with an interested client fell from 33 to 17 percent, while the proportion of new clients leaving the SDP without having selected a method decreased from seven to two percent (not shown).

Once a method has been selected, all new users should receive basic information about how to use their method effectively, what side effects might be experienced, and how best to manage them if they occur. The following table presents the percentage of new users that received such information in 1994 and 1998.

Table 10 *Percentage of Visits during which Method-Specific Information Discussed with New Users*

	1994 N=45	**1998** N=53
How to use method (new users of pills, condoms, spermicides, or diaphragm)	61	39
Possible side effects (new users of pills, injectables, or IUD)	32	28
Management of side effects (new users of pills, injectables, or IUD)	32	14
Possibility of changing method if dissatisfied (new users of pills, injectables, or IUD)	NA	23
Where to receive re-supplies (new users of pills, injectables, condoms, or spermicides)	NA	36

NA= Information not available for 1994

Observations of visits with new contraceptive users suggest that few clients receive the basic information they need to use their method correctly and that the situation seems to have gotten worse since 1994.

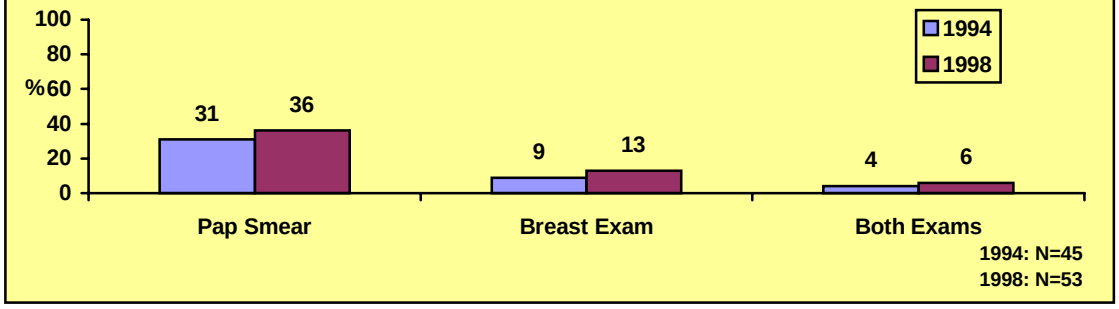
For returning family planning clients, providers are expected to inquire whether the user has any method-related problems. In 1994, only 27 percent of users were asked

whether they had problems with their method. In 1997, that figure rose significantly to 63 percent, marking important progress during the study period.

A.3 Technical Competence of Family Planning Providers

In addition to an adequate exchange of information between providers and their clients, the quality of services received is dependent upon whether indicated exams and procedures are performed by the provider. Family planning consultations do not routinely require the completion of exams. However, given the recognized need to expand coverage of gynecological cancer screening, it is hoped that Pap smears and breast exams will be offered to new family planning clients. The percentage of initial family planning visits during which the provider performed a breast exam and performed or referred the client for a Pap smear is presented as a general indication of reproductive health service integration.

Figure 13 ***Percentage of Visits with New Family Planning Clients that Included Pap Smear and Breast Exam, 1994-98***



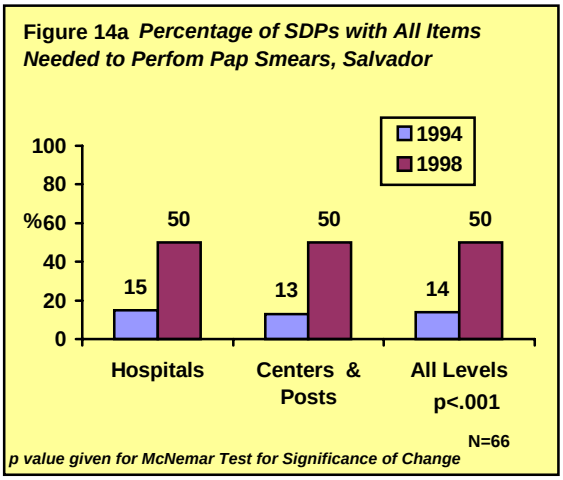
The proportion of visits with new users that included either exam remained virtually unchanged during the study period, with only six percent of new family planning clients receiving a Pap smear *and* breast exam in 1998.

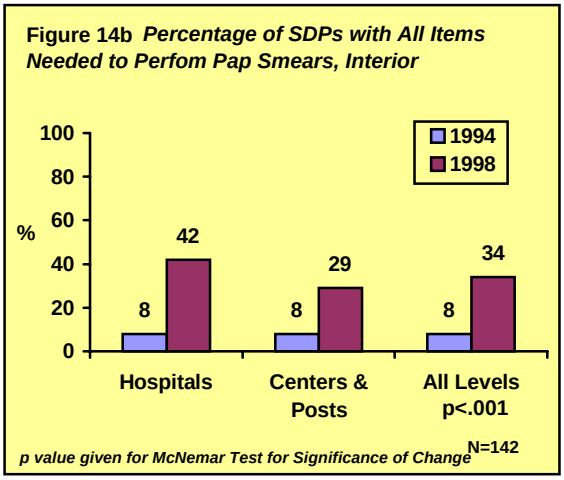
B.1 Readiness to Provide Gynecological Care

An evaluation of facilities' readiness to provide basic gynecological services, including Pap smears and the diagnosis of reproductive tract infections (RTIs), is presented for the 208 SDPs visited during both Situation Analysis studies.

An SDP's readiness to provide Pap smears depends on the availability of the following eight items: a trained provider (doctor or nurse), GYN exam table, speculum,

lamp or hand-held light, wooden spatulas (for specimen collection), slides, gloves, and equipment or supplies for sterilizing instruments. The following graphs present the percentage of SDPs that had all eight items on hand in 1994 and 1998, by level of SDP and region.





SDPs of all levels in both regions registered important gains in overall preparation to offer Pap smears. For Bahia as a whole, the proportion of all SDPs prepared to perform Pap smears increased significantly from 10 percent in 1994 to 39 percent in 1998 (see Table A.8). A similar improvement in service readiness was registered among intervention SDPs (from 12 percent in 1994 to 49 percent in 1998). In both regions, increased readiness to provide Pap smears was largely due to the greater availability of consumable supplies (slides, spatulas, and gloves).

SDP readiness to offer basic STD screening, or curative gynecological care, was assessed according to the availability of the above eight items needed to perform a Pap smear, plus ring forceps, acetic acid or iodine, and a microscope for examination of cervical and vaginal discharge. The proportion of SDPs with all 11 items increased sharply, from two to 22 percent, with significant improvement in both regions (see Table A.8). Improvement was nearly identical among intervention SDPs, with the proportion of SDPs prepared to deliver curative gynecological services increasing from one to 23 percent. The least available item in both years was a microscope, stocked in less than 40 percent of all SDPs (and intervention SDPs) in 1998.

XX. B.2 Information Exchange between GYN Providers and Clients

Whether a gynecological visit is for preventive or curative services, the following information should be obtained by the provider: 1) current symptoms of infection and previous experience with STDs; 2) date of last menstrual period; 3) current contraceptive use or needs; and 4) date of the client's last Pap smear. Excluding those clients returning for test results or to receive treatment during a follow-up visit, the following table presents the percentage of gynecological consultations during which basic information was exchanged.

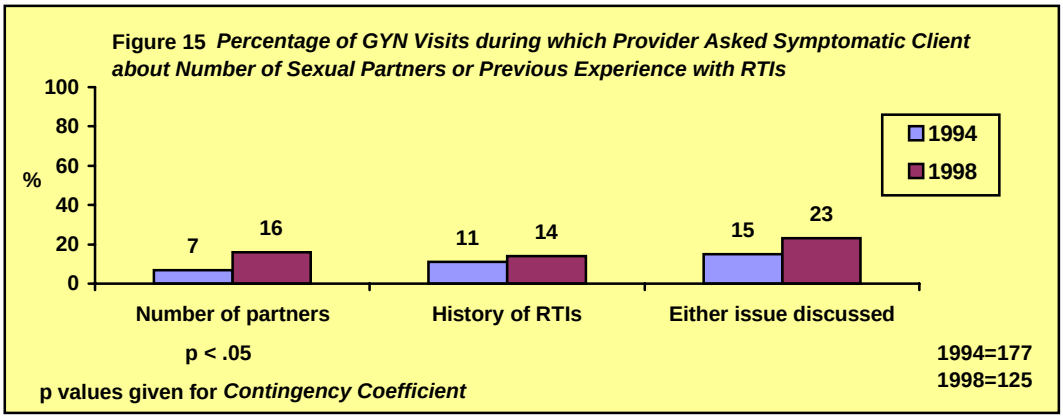
Table 11 *Distribution of GYN Visits by Information Exchanged between Provider and Client, 1994-98*

	1994 N=311	**1998** N=185
Provider asked (or client spontaneously mentioned) current RTI symptoms/STD history	58	69*
Date of last menstrual period verified	59	62
Discussion of contraceptive needs/current use	37	43
All three items discussed	19	23
Date of last Pap smear verified	NA	52
All four items discussed	NA	14

Contingency Coefficient: *p< .05
NA= Information not available for 1994

There was a statistically significant increase in the proportion of consultations that included a discussion of current symptoms of an RTI and/or a confirmation of the client's experience with STDs. However, there was no significant improvement in the exchange of information in any other area. In both years, less than one quarter of visits included a discussion of the first three items listed in Table 11. Only half of all providers observed verified the client's need for a Pap smear.

When a client reports RTI symptoms, the provider is expected to ask her about previous experience with RTIs and her number of sexual partners to help assess whether her current infection is an STD. Very few providers were asking symptomatic clients these questions in either 1994 or 1998, although there was a statistically significant increase in the proportion of providers asking about a symptomatic client's number of sexual partners.



In 1998, two items regarding the contraceptive status of GYN clients were added to the observation module to help measure the level of service integration. Of the 44 GYN visits with clients who were not using a contraceptive method, the provider recommended a contraceptive method a third of the time. Likewise, of the 71 visits with contraceptive users, the provider asked the client whether she was satisfied with her method during 39 percent of such observations.

XXI. B.3 Technical Competence of Gynecological Providers

The technical competence of gynecological providers was assessed through three indicators. First, the percentage of all visits that included a Pap smear, breast exam, or both is presented as a proxy for the thoroughness of the GYN consultation. Second, the quality of curative services is indicated by the percentage of visits with symptomatic[8] clients during which a speculum exam was performed, including a visual examination of the cervix using acetic acid or iodine (Schiller's Test), or a microscopic examination of discharge (wet mount). And third, the percentage of visits with clients complaining of pelvic pain who received a pelvic exam indicates how well providers are managing potential cases of pelvic inflammatory disease.

[8] Symptomatic clients are those with complaints of unusual discharge and/or pelvic pain.

Table 12 *Percentage of GYN Visits during which Appropriate Procedures Performed or Prescribed, 1994-98*[9]

	Pap Smear (1)		Breast Exam (2)		Both Pap & Breast Exam (1 & 2)		Speculum Exam (3)		Visual Eval. of Cervix (4)		Microscopy (5)		3 **and**: 4 **or** 5		Pelvic Exam (6)	
	94	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**
GYN clients	52	62	28	30	17	20	-----	----	-----	----	-----	----	---	----	---	---
Symptomatic GYN Clients	----	----	----	----	----	----	54	37**	15	14	10	27***	16	32***	42	45

Contingency Coefficient, ***p < .001

Note: GYN clients include only those presenting for initial services, excluding clients returning for results or treatment; percentage of visits including pelvic exam calculated for clients with pelvic pain only.

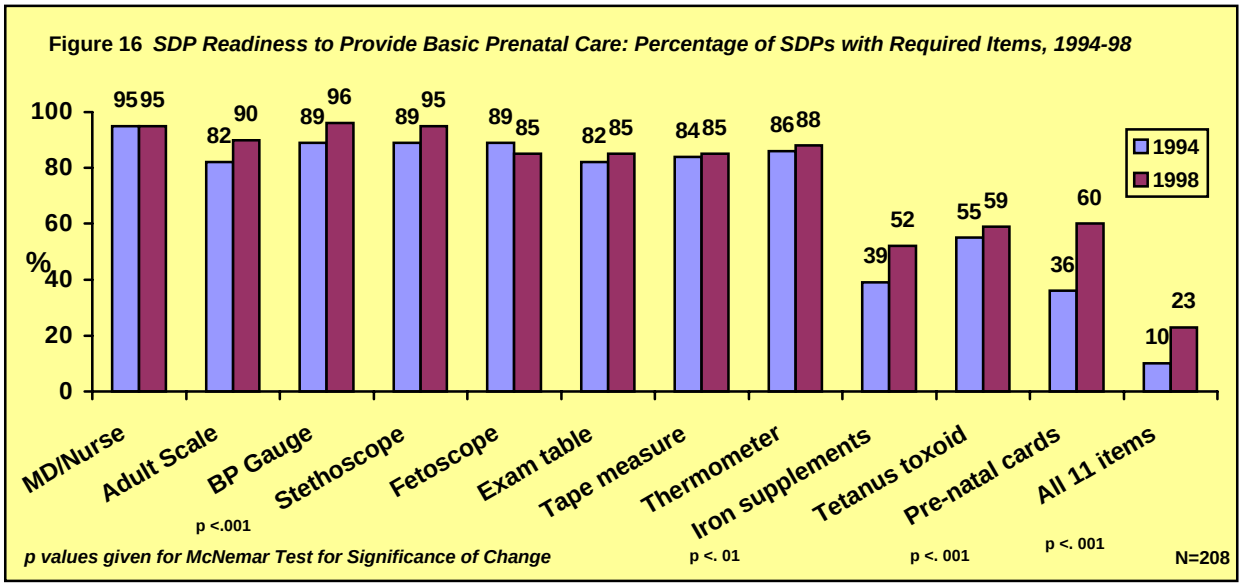
The percentage of gynecology clients receiving a Pap smear seemed to improve, although the increase was just outside of the standard range of statistical significance (p=.064). There was no improvement in the percentage of clients receiving breast exams.

Providers' abilities to manage curative gynecological care seem to have worsened during the study period, as the proportion of visits with symptomatic clients that included a speculum exam decreased significantly (from 54 to 37 percent). There was no improvement in the percentage of consultations that included a visual examination of the cervix (using acetic acid or iodine), although microscopy was significantly more likely to be performed or prescribed in 1998 than in 1994. The proportion of clients with complaints with pelvic pain that received a pelvic exam did not show a statistically significant increase, remaining below 50 percent in 1998.

C.1 Prenatal Service Readiness

The evaluation of SDP readiness to provide prenatal care took the following eleven items into consideration: presence of a trained provider (MD or nurse); adult scale; blood pressure gauge; stethoscope; fetoscope; examination table; tape measure; thermometer; iron supplements; tetanus toxoid; and prenatal cards for recording examinations and charting the pregnancy's development.

[9] Distributions for breast exams and speculum exams reflect the percentage of relevant observations during which these exams were actually performed; distributions for Pap smears, visual examinations of the cervix (using acetic acid or the Schiller's Test), and microscopy include observations as well as provider referrals.



In 1998, 90 percent or more of all SDPs had a trained provider, adult scales, blood pressure gauges, and stethoscopes. A significant gain in the availability of blood pressure gauges was registered among SDPs in both regions (see Table A.9), while the availability of iron supplements increased significantly in Salvador. Stocks of prenatal cards increased significantly in the interior (from 28 to 59 percent), with general availability rising from 36 to 60 percent of all SDPs in Bahia.

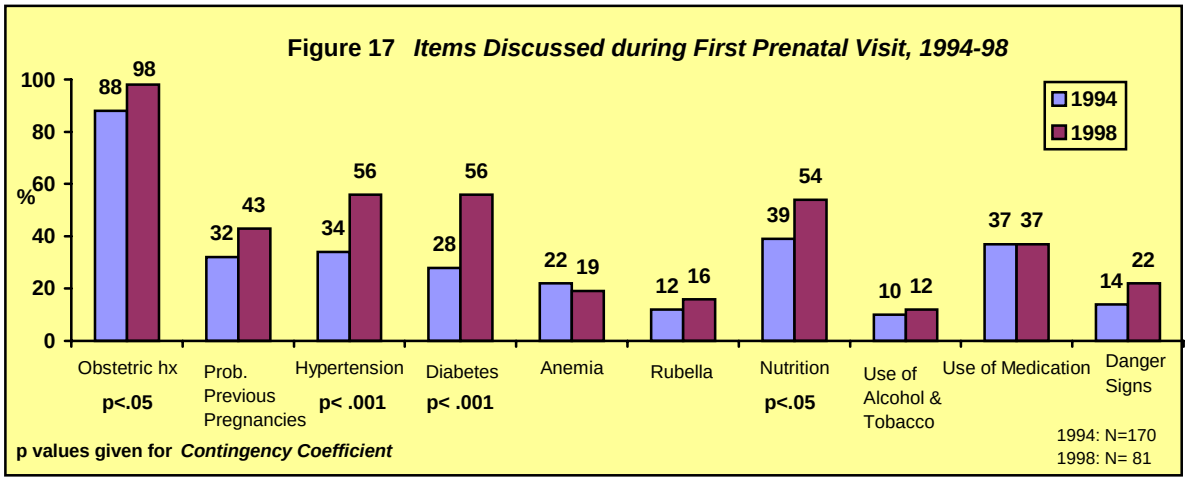
The percentage of facilities with all 11 items available increased significantly, from 10 percent in 1994 to 23 percent in 1998, with significant gains made in both regions. For Bahia as a whole, all items except fetoscopes were more available in 1998 than in 1994, with the decrease due to a drop in availability among hospitals in Salvador. It is also worth noting that centers and posts were better prepared than hospitals to offer prenatal care: 27 percent of centers and posts had the 11 items available in 1998, compared with 16 percent of hospitals (see Table A.9).

Intervention SDPs made significant gains in the availability of iron supplements and prenatal cards (see Table A.9). There was also a large increase in the proportion of SDPs with all eleven items available, rising from 14 percent in 1994 to 44 percent in 1998.

C.2 Information Exchange between Prenatal Providers and Clients

The adequacy of the information exchange between providers and prenatal clients was evaluated for the first prenatal visit. During the first prenatal consultation, the provider

is expected to ask the client about her number of previous pregnancies, problems with prior pregnancies or deliveries, and verify whether she has a history of hypertension, diabetes, anemia, or rubella. In addition to medical history, the provider is expected to discuss her increased nutritional needs during pregnancy, the risks of smoking and alcohol consumption, restrictions on the use of medication during pregnancy, and danger signs such as severe headaches, bleeding, or fever. The following chart displays the percentage of first prenatal visits that included a discussion of these issues.



Of the ten items presented in Figure 17, four showed significant improvement. Yet the only issue consistently discussed during a large majority of initial prenatal consultations was the client's obstetric history. Other medical history issues such as diabetes and hypertension were discussed in just over half of all consultations with new prenatal clients in 1998. Only a small minority of providers discussed the risks of alcohol and tobacco consumption with expectant mothers or alerted them to pregnancy danger signs that require medical evaluation. In general, consultations with nurses included a more complete exchange of information than those conducted by physicians (not shown).

C.3 Technical Competence of Prenatal Providers

The technical competence of prenatal providers was evaluated according to tests performed during the first prenatal visit, as well as procedures that should be performed during all subsequent visits. Evaluation of the first visit was based on completion of the

following items: calculation of gestational age and probable date of delivery, VDRL test (for Syphilis), urinalysis, hematocrit or hemoglobin, determination of blood group (Rh factor), determination of vaccination status, measurement of uterine height, blood pressure, and weight. All subsequent visits should include a calculation of gestational age, measurement of uterine height, blood pressure, and weight.[10]

Table 13 *Percentage of Prenatal Visits during which Appropriate Procedures Performed, 1994-98*

	Gest. Age		Due Date		VDRL		UA		HT/HB		Blood Typing		Vaccin. Status		Uterine Height		Weight		Blood Pressure	
	94	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**
1st Visit	72	83	50	53	58	69*	66	75	64	77*	62	59	62	67	47	57	41	52	75	79
Subseq. Visits	69	75	---	----	----	----	----	----	----	----	----	----	---	----	64	61	29	55***	63	83***

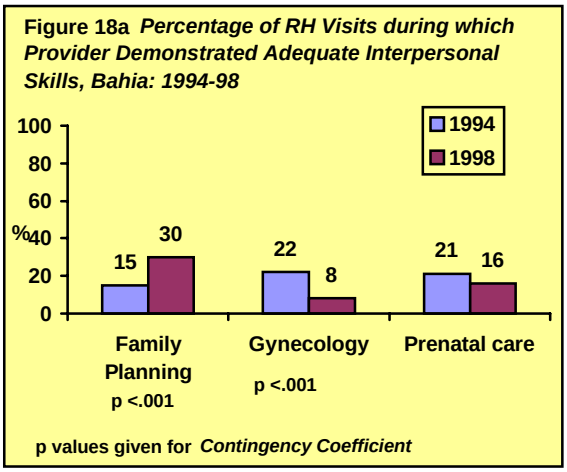
Contingency Coefficient, ***p < . 001; *p < .05
Note: UA= Urinalysis; HT/HB=Hematocrit or Hemoglobin

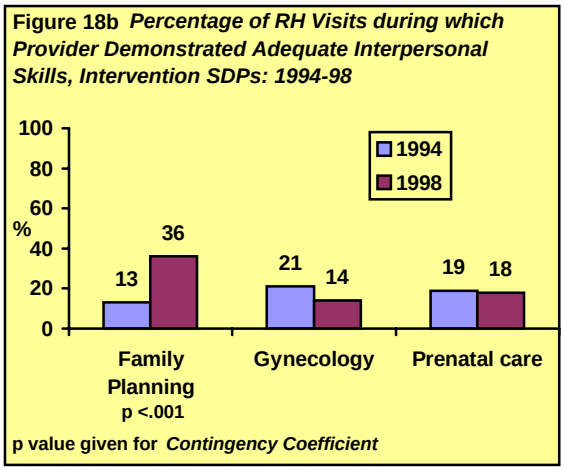
While nearly all indicated tests or procedures seemed to be more widely performed in 1998 than in 1994, only two of the ten considered showed statistically significant increases. The proportion of clients whose hematocrit or hemoglobin was taken increased by 20 percent, and the percentage of clients undergoing syphilis testing increased by 19 percent. Large, significant improvements were also seen in two of the four indicators of technical competence during subsequent prenatal visits.

Additional Quality of Care Considerations: Providers' Interpersonal Skills

The interpersonal skills of providers were considered satisfactory if the following three conditions were met: if the client was greeted courteously; if privacy was maintained during the consultation; and if the client was asked whether she had any doubts or questions at the end of her appointment. The percentage of visits during which these conditions were met is presented by year for all SDPs (Figure 18a) and for intervention facilities (Figure 18b).

[10] Minimum tests and procedures for first and subsequent prenatal visits are based on norms developed by the





Significant gains were made in terms of the quality of interpersonal relations between family planning providers and their clients. Gynecological providers scored significantly lower in 1998 than they had in 1994, and prenatal providers showed no statistically significant change. Even with regard to family planning, less than a third of providers demonstrated adequate interpersonal skills in 1998. The condition least likely to be met in any type of consultation was the provider asking his/her client whether she had any doubts or concerns at the end of her appointment, ranging from a high of 40 percent of family planning observations in 1998 to a low of nine percent of gynecological observations.

Providers working in intervention SDPs performed slightly better than all providers at the state level. There was no statistically significant difference in providers' interpersonal skills by region. Large differences were evident by type of provider, with nurses performing significantly better than doctors during family planning and prenatal visits (not shown).

Provider Attitudes and Practices

While the evaluation of providers' technical competence and interpersonal skills was based on observations of RH visits, the attitudes and practices of providers are worth considering as additional determinants of service availability and quality. Data presented below are based on individual, structured interviews with providers attending RH clients on the day their facility was visited.

Centro Latinoamericano de Perinatología y Desarrollo Humano (CLAP) and the World Health Organization.

D1. Family Planning

Nearly all of the family planning providers interviewed (120 of 136) reported finding it difficult to recommend one or more types of contraception to clients. Doctors were significantly more likely than nurses to report difficulty recommending certain contraceptives: only five percent of doctors reported that they would recommend *any* method, compared with 21 percent of nurses.

Thirty-nine percent of providers reported that it would be difficult to recommend the diaphragm, 80 percent of whom stated that their resistance was due to the method's "low effectiveness" and/or because it was "difficult to use". Thirty-five percent of providers would find it difficult to recommend natural methods, such as rhythm or withdrawal, for the same reasons. And 13 percent of providers would find it difficult to recommend spermicides, again mainly due to "low effectiveness" or because of "difficult use". Eleven percent of providers would find it difficult to recommend female sterilization, a curious finding given the method's high prevalence rate in Brazil. The main objections to the method were that it is non-reversible (mentioned by 47 percent) and due to its "harmful side effects" (40 percent).

Very few providers reported that they would have difficulty recommending oral contraceptives, the IUD, or vasectomy, and only five percent would find it difficult to recommend injectables.

D2. Men and Reproductive Health

Providers' attitudes toward male participation in family planning should be considered when developing strategies to promote greater male involvement in reproductive health. Fewer than half of family planning providers (45 percent) reported that contraceptive services were available for men at their facility. Of the 94 providers who reported offering STD services, 40 percent said services were offered to men, with greater availability reported in the interior of the state (53 percent) than in Salvador (27 percent). Only in reference to general ambulatory care did the large majority of providers (74 percent) report that men's services were available, again with significantly greater availability in the interior (85 and 64 percent respectively).

To assess provider attitudes toward vasectomy, family planning providers were asked a series of three questions. First, providers were asked whether they would consider tubal ligation or vasectomy to be the better method for a couple wanting a permanent form of contraception and without contra-indications to either procedure. Seventy-six percent of providers named vasectomy as the better method and an additional 19 percent stated that either form of sterilization would be equally satisfactory. Only 5 percent of providers reported that tubal ligation would be the better method, ranging from a high of 10 percent of providers in the interior to a low of two percent in Salvador. However, less than half of family planning providers reported that they recommended vasectomy on a regular basis, and eleven percent reported that they never recommended vasectomy to clients. Vasectomy was significantly less likely to be regularly recommended by nurses (18 percent) than by doctors (52 percent). Finally, providers were asked why so few men choose vasectomy. A large majority of providers (82 percent) felt that low prevalence rates were due to men's fears of impotence, while an additional 14 percent stated that it was due to a lack of information or promotion of the method. No providers felt that low prevalence rates were due to limited access to vasectomy services.

While it does not appear that providers themselves consider vasectomy to be an inferior form of permanent contraception, it is clear that family planning providers do not regularly promote the method. Further research is needed to determine to what extent providers' presumptions that clients will not accept vasectomy are limiting service access.

Nearly all providers interviewed (95 percent) felt that family planning appointments for couples would be useful, and almost two-thirds (62 percent) claimed that they requested clients to bring their partners with them to appointments. Thirty-six percent of family planning providers stated that they had attended one or more clients together with their partners during the past month. (The median number of 'couple consultations' reported was three per month, most frequently reported by auxiliary staff.)

A nearly universal endorsement of family planning appointments for couples did not mean that all providers view family planning as the couple's responsibility. While the majority of providers (63 percent) stated that the couple has a shared responsibility to prevent unwanted pregnancies, 32 percent of providers reported that preventing unwanted

pregnancies is primarily the woman's responsibility. In contrast, only five percent of providers felt that men have the greater responsibility for contraception.

A slightly larger majority of providers reported that STD prevention is the couple's responsibility (69 percent), with little variation by type of provider. The remainder of providers were evenly divided between feeling that safe sex was primarily the woman's responsibility (16 percent) or the man's (15 percent). There was no statistically significant difference in responses by type of provider or by region.

An analysis of provider attitudes and practices regarding specific contraceptive methods suggests that providers may be unnecessarily restricting the range of methods available to clients. Well over a third of providers find it difficult to recommend the diaphragm to clients because they believe it is not sufficiently effective or is difficult to use, and less than half of family planning providers regularly discuss vasectomy as a contraceptive option with interested clients. Furthermore, a significant proportion of providers continue to view family planning as a woman's responsibility, which may further limit access to and use of male methods.

D3. Cervical Cancer Prevention

Gynecology providers were asked three questions to assess their attitudes and practices regarding cervical cancer prevention: 1) at what age should women begin having Pap smears; 2) how often should they be performed, and 3) after what age do women have an increased risk of developing cervical cancer.

In 1998, the large majority of providers (80 percent) responded that women should have their first Pap smear upon initiating sexual activity (considered an appropriate response), although nine percent of providers reported an age between ten and 17.

According to MOH guidelines, a woman's first two Pap smears should be performed one year apart and if both are normal, future tests should be performed every three years. Most GYN providers (59 percent) reported that Pap smears should be performed yearly, and over a third (39 percent) reported that the test should be performed every six months.

Most providers were unable to identify when women have a greater risk of cervical cancer. Half of all gynecological providers named an age between 12 and 34 years as

associated with increased cervical cancer risk and seven percent of providers said they did not know. Only 40 percent of GYN providers reported that women have an increased risk of developing cervical cancer after the age of 35 to 45 (any age is this range was considered a correct response).

These results indicate that effective refresher courses are needed to orient GYN providers about the management of cervical cancer prevention, both to avoid wasteful practices as well as to better target higher-risk clients.

D4. Prenatal Practices

Prenatal providers were asked about their prescription of tetanus toxoid and iron supplements. As a strategy to decrease the incidence of tetanus among newborns, providers are expected to recommend tetanus vaccinations to all women of reproductive age, rather than just pregnant women. Important gains were made during the study period: in 1998, 40 percent of prenatal providers reported prescribing tetanus toxoid for all reproductive age women, up from 26 percent in 1994.

Providers were also asked whether they prescribed iron supplements for all pregnant women or just for prenatal clients suspected of having anemia. The proportion of providers prescribing iron supplements for all pregnant women (as is recommended) was unchanged (26 percent in both years), and there was a slight *decrease* in the percentage of providers correctly identifying the first trimester as the optimal time to begin iron supplementation (53 percent in 1994 and 45 percent in 1998).

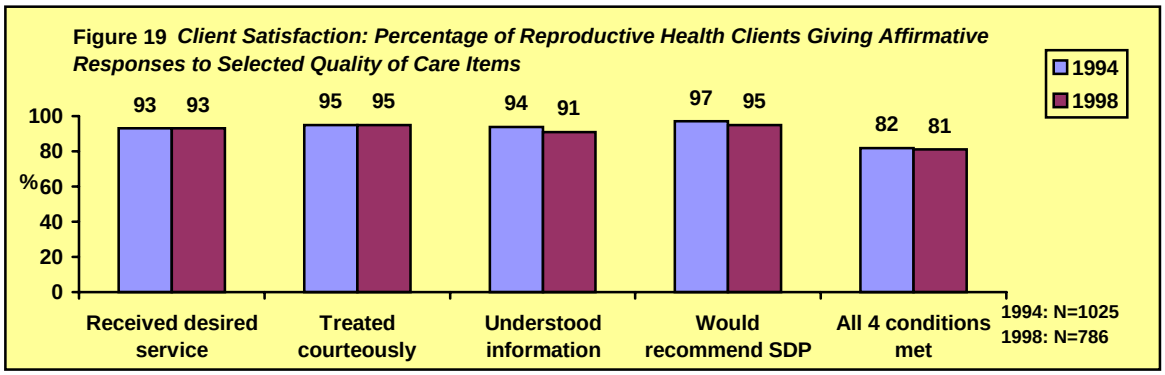
For all three indicators of adequate prenatal practices, there were statistically significant differences by type of provider, with doctors more likely to give the correct response than nurses (*Contingency Coefficient*, $p < .001$).

Client Satisfaction with Reproductive Health Services

Client satisfaction is recognized as an important component of service quality (Vera, 1993: 40; Koenig et al, 1997: 285), yet is a difficult issue to measure, particularly when relying on structured interviews conducted in close proximity to service providers (Simmons and Elias, 1994: 9). Although alternative methodologies for measuring client satisfaction, such as in-depth interviews conducted in clients' homes, are likely to produce richer data, the

items included in the exit interview module that reflect various aspects of client satisfaction are presented below.

Figure 19 presents the distribution of affirmative responses to the following four items related to client satisfaction: 1) did you receive the service you desired; 2) do you feel you were treated courteously by the provider; 3) did you understand the provider's explanation of your problem or situation; and 4) would you recommend the services offered in this facility to a friend or relative.



The remarkably high proportion of clients responding affirmatively to all items in both 1994 and 1998 suggests that clients are quite satisfied with the services received.

Clients were also asked how long they had waited to be seen by the provider and whether that waiting time seemed reasonable.

Table 14 *Percent Distribution of RH Clients by Time Spent Waiting to be Attended and Percent Reporting Waiting Time as Reasonable, 1994-98*

XXII. XXIII. Waiting Time	% Distribution of Clients by Time Waited to be Seen		% of Clients who Considered Waiting Time to be Reasonable, by Time Waited	
	1994 N=1017	1998 N=786	1994	1998
Less than 1 hour	15	36	97	92
1 to 2 hours	29	22	75	66
More than 2 hours	56	42	46	47
Total	100	100	63	67

In 1998, 42 percent of clients waited over two hours to be attended (down slightly from 56 percent in 1994), while the percentage of clients waiting less than one hour more than doubled (from 15 percent in 1994 to 36 percent in 1998). Although waiting time decreased during the study period, client perceptions of waiting time remained largely unchanged (63 percent reported their waiting time as reasonable in 1994 as did 67 percent in 1998). Nearly all clients were satisfied with a wait of less than one hour and two-thirds viewed waiting one to two hours as reasonable. Less than half of respondents who waited more than two hours felt their wait was reasonable.

In both 1994 and 1998, a large majority of RH clients felt their consultation lasted an appropriate amount of time (81 and 87 percent respectively). Based on observations of consultations, the median length of family planning and prenatal visits remained the same (ten minutes for both in 1994 and 1998), while the median time spent with gynecology clients increased slightly, from eight to 8.5 minutes.

Just under one third of RH clients in 1994 and 1998 reported that the SDP they attended was not the closest one to their home. In both years, the most frequent reason given for seeking the services of the more distant SDP was the perception that it offered higher quality services (60 and 55 percent respectively). This finding suggests that service quality is an important issue for many RH clients. However, in 1998, the second most frequently cited reason for seeking services at a more distant SDP (mentioned by 40 percent) was because the desired service was unattainable at the closer facility (i.e., service not offered, no appointments available, or insurance not accepted).

Clients were also asked if they felt that services were improving at their facility. In 1998, 53 percent of respondents felt that some or all services were improving, while 47 percent reported that services had not changed (38 percent) or had gotten worse (nine percent).

As a final measure of client satisfaction, family planning clients were asked whether they had received the method of their choice. Thirty-six percent of respondents in 1994 and 32 percent in 1998 reported they had *not*. In 1998, of the 47 women who had not received their method of choice, 16 (or 34 percent) had wanted the IUD. Reasons for not receiving the IUD were varied: five of the 16 women (31 percent) said they did not receive the method due to a fear of side effects, and four women (25 percent) reported that the IUD was unavailable. Nevertheless, 94 percent of all family planning clients who had *not* been given their method of choice confirmed that they had received all desired services from the SDP.

In sum, the large majority of clients report being highly satisfied with services received and approximately half report that some or all services are improving. The only area in which a significant proportion of clients appeared dissatisfied was related to time spent waiting for services, described as unreasonably long by one third of all clients interviewed.

V. CONCLUSIONS

During the past four years, progress has been made toward the goal of providing comprehensive reproductive health care in public sector facilities in the state of Bahia. Specifically, there was significant growth in the number of SDPs offering family planning services, so that just over half of all facilities were offering contraceptive services in 1998. And family planning services became universally available among intervention SDPs during the study period. In contrast, no improvement was made in the availability of Pap smears, offered by approximately half of all SDPs in both years, nor in the availability of STD screening or treatment, offered by less than one third of facilities surveyed.

Significant gains were made in the availability of IEC materials covering gynecological cancer prevention, prenatal care, and STDs/AIDS. IEC materials in family planning were the most widely available materials in 1998 (stocked in 51 percent of SDPs),

although their availability remained stagnate during the study period in all but the 73 intervention facilities.

Large improvements were found in SDP record keeping throughout the state, and three out of every four facilities were maintaining records on reproductive health clients for purposes of client follow-up in 1998. Significant improvements were also made in the area of supervision, although less than one third of SDPs were receiving adequate supervisory visits in 1998.

There is strong evidence that logistics management has improved over the study period. There was a significant increase in the percentage of SDPs ordering supplies at regular monthly or bimonthly intervals and several consumable items were more widely available in 1998 than they had been in 1994 (e.g., oral and injectable contraceptives, iron supplements, slides, spatulas, and gloves). However, continued improvement will be needed for some time to come as evidenced through high levels of reported stockouts and the substantial proportion of family planning SDPs that were found to have less than one month's worth of supplies on hand. In particular, the finding that nearly 60 percent of SDPs reported condom stockouts in the two months prior to the survey presents a serious obstacle to the expansion of meaningful STD services. Over the past decade, the state of Bahia has moved to decentralize public health care from the state to the municipal level. Municipalities, which are now largely responsible for managing their own logistics systems, should thus be targeted for additional interventions aimed at improving logistics management.

There is considerable variation in program preparation by region and level of SDP, with facilities in Salvador significantly better prepared to provide nearly all services than SDPs in the interior. Health centers and posts were better prepared to offer contraceptive methods and prenatal services, while hospitals scored highest in readiness to provide preventive and curative gynecological care.

Results suggest that the quality of prenatal care is improving, in terms of both the exchange of information between provider and client as well as the provider's technical competence. Similar improvements in the quality of care were not found during observations of family planning or gynecological visits. Although the number of contraceptive methods discussed with new family planning users has increased, few

providers screen new users for potential contraindications nor do they provide basic information on correct method use or expected side effects. Informing new users about what side effects they might experience and how to manage them is particularly important. Data from the *1991 Demographic and Health Survey in Northeastern Brazil* indicate that 52 percent of pill users and 73 percent of users of injectables discontinued their method within one year of initiating use, principally due to side effects (Anhel Ferraz, 1994: 11). It has also been demonstrated that new users receiving information about possible side effects are more likely to use their method for a longer period than women who receive little or no information (Cotten *et al*., 1992: 148; Bruce, 1990: 68). Thus, if family planning providers are to be effective in promoting sustained contraceptive use among interested clients, further attention must be given to the completeness of the method-specific information they receive.

Although there was a small improvement in the information exchange between gynecological providers and clients, there was no change the proportion of gynecology clients receiving a Pap smear and breast exam during their appointment, and the percentage of symptomatic clients receiving a speculum exam decreased significantly. Findings suggest an urgent need to improve RTI case management. Providers rarely pose basic risk assessment questions to symptomatic clients, less than half of whom receive a minimal gynecological evaluation. The growing threat of HIV infection in Brazil makes rapid improvement in RTI diagnosis and treatment a critical issue.

In an attempt to summarize the large quantity of information made available through the two Situation Analysis studies and to help operationalize study findings into program action, ten key recommendations are presented below. It is hoped that these recommendations will help policy makers and program managers prioritize future efforts to increase the accessibility and quality of reproductive health services in Bahia. Continued discussion and interpretation of study findings at the state and municipal level will be essential to refining courses of action.

Recommendations for Action

1. Decrease gap in family planning and gynecological service availability currently separating the Salvador metropolitan area and the rural interior of the state.
2. Increase the quantity of IEC materials distributed to all SDPs, with priority given to SDPs in the interior.
3. Fill remaining gaps in basic equipment needs of SDPs. Specifically, over a third of facilities do not have tenaculums and 28 percent do not have ring forceps, precluding the delivery of IUD services in all facilities missing either item. Over one quarter of all centers and posts in the interior do not have speculums or exam tables, rendering them unable to offer basic gynecological services. Nearly two-thirds of all SDPs lack microscopes, severely limiting their ability to diagnose and treat RTIs.
4. Increase the frequency of supervision for SDPs of all levels in both Salvador and the interior.
5. Improve SDP tracking of stock movements to accurately raise the quantity of stocks maintained at each SDP to the equivalent of two months of consumption, thus providing a reasonable cushion against stockouts. Facilities should routinely re-calculate their average monthly consumption (e.g., every six months) to accommodate changes in demand over time.
6. Institute monthly monitoring of state and municipal logistics systems to determine principal sources and frequency of stockouts and to quantitatively track change over time. A reduction in the incidence of contraceptive stockouts should immediately result in a wider mix of contraceptive methods at SDPs offering family planning.
7. Give greater emphasis to the importance of the information exchange between the provider and client during provider trainings. Specifically, providers should be trained to: routinely ask clients whether they have any questions before ending the consultation; provide specific information on possible side effects and problem management for the contraceptive method selected by new users; and perform thorough medical histories for all RH clients, especially during initial visits with prenatal clients. Future provider trainings should also include models for discussing sexual behavior with clients who may have an elevated risk for STDs.

8. Promote RH service integration by training providers to routinely offer Pap smears and breast exams to family planning clients, and to assess and meet the contraceptive needs of women seeking gynecological services. Prenatal clients should routinely receive information on contraceptive services toward the end of their pregnancy.
9. Strengthen the technical training of gynecological providers. Refresher courses are needed in gynecological cancer and its prevention, and basic training in the management of curative gynecological care, including STD risk assessment, microscopy and the syndromic diagnosis of RTIs where laboratory testing is not available.
10. Encourage SDPs to experiment with ways to decrease and/or make better use of client waiting time (e.g., allow clients to schedule appointments in advance, shift the number of providers available throughout the day to better respond to peak demand hours, offer informational sessions in waiting areas, increase use of auxiliary personnel for non-technical procedures).

VI. BIBLIOGRAPHY

Anhel Ferraz, Elisabeth. *Dinâmica do Uso da Anticoncepção na Região Nordeste do Brasil: Uma Análise de Descontinuação, Falha, e Mudança de Métodos com Tabelas de Mortalidade*. Working Paper from Macro International's "Seminário sobre a Dinâmica da Anticoncepção na América Latina", Maryland, June 1994.

BEMFAM (Sociedade Civil Bem-Estar Familiar no Brasil) and Macro International. *Pesquisa Nacional sobre Demografia e Saúde 1996*. Demographic and Health Surveys Program, Calverton: 1997.

Bruce, Judith. "Fundamental Elements of the Quality of Care: A Simple Framework". *Studies in Family Planning*, 21.2 (1990): 61-91.

Cotten, Niki, John Stanback, Halima Maidouka, *et al*. "Early Discontinuation of Contraceptive Use in Niger and The Gambia". *International Family Planning Perspectives*, 18.4 (1992):145-149.

Koenig, Michael, Mian Bazle Hossain and Maxine Whittaker. "The Influence of Quality of Care upon Contraceptive Use in Rural Bangladesh". *Studies in Family Planning*, 28.4 (1997): 278-289.

Ministry of Health of Brazil/Viva Mulher. *Programa Nacional de Controle do Cancer do Colo Uterino*: *Análise da situaçao*. São Paulo: 1996, 8-12.

Simmons, Ruth and Christopher Elias. "The Study of Client-Provider Interactions: A Review of Methodological Issues". *Studies in Family Planning*, 25.1 (1994): 1-17.

Vera, Hernán. "The Client's View of High Quality Care in Santiago, Chile". *Studies in Family Planning*, 24.1 (1993): 40-49.

World Bank. "O sistema de saúde e a Saúde Reprodutiva da Mulher" in *Saude Reprodutiva da Mulher*, 8215-BR, (1992): 1-9.

VII. APENDIX TABLES A.1-A.9

Table A.1 *Quality Of Logistics System: Percentage of SDPs with Basic Components of Logistics System, 1994-98*

XXIV. XXV. XXVI.	SALVADOR N=66						INTERIOR N=142						BAHIA N=208						INTERVEN. N=73	
	H		C &P		**TOTAL**		H		C &P		**TOTAL**		H		C &P		TOTAL		**TOTAL**	
	94	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**
XXVII. Supplies requested monthly or bimonthly	40	83	50	69	47	73**	37	42	42	56	40	51	38	52	45	61	42	58**	51	80***
Stock balance sheet used	70	72	78	83	76	80	71	66	60	70	64	68	71	68	66	75	68	72	73	86
Supplies stocked by expiration date	85	83	87	83	86	83	87	76	71	65	77	69	86	78	77	72	80	74	88	85
Supplies protected from direct light & moisture	100	100	96	92	97	94	94	81	84	82	88	82	96	86	88	85	91	86	99	97
XXVIII. All 4 conditions	30	56	39	54	36	55*	33	26	29	36	30	32	32	34	32	42	32	39	34	63***

McNemar Test for Significance of Change: ***p< .001; **p< .01; *p< .05

C & P= Centers and Posts

Table A.2 *Percentage of SDPs Maintaining RH Records and Use of Records for Client Follow-up or Quality Control, 1994-98*

XXIX.	SALVADOR						INTERIOR						BAHIA						**INTERVEN.**	
XXX.	N=66						N=142						N=208						N=73	
	H		C &P		**TOTAL**		H		C &P		**TOTAL**		H		C &P		TOTAL		**TOTAL**	
XXXI.	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**
XXXII. FP records	55	72	41	67	46	68***	4	26	17	44	12	37***	18	38	25	52	23	47***	47	92***
Gynecology records	75	83	61	88	65	86**	23	62	26	52	25	56***	38	68	38	64	38	65***	48	77***
Prenatal records	70	61	30	83	42	77***	31	64	26	71	28	68***	42	63	27	75	32	71***	45	82***
XXXIII. Records maintained in useable form	95	89	94	94	94	92	71	79	83	85	80	83	78	82	87	88	84	86	95	99
XXXIV. Organized records used for follow-up /quality control	40	78	26	88	30	85***	12	72	10	75	11	74***	19	73	15	80	17	77***	25	88***

McNemar Test for Significance of Change: ***p< .001; **p< .01

Table A. 3 Percentage of SDPs Receiving Regular Supervisory Visits and Visits of Adequate Quality, 1994-98

XXXV.	SALVADOR						INTERIOR						BAHIA						**INTERVEN.**	
XXXVI.	N=66						N=142						N=208						N=73	
	H		C &P		**TOTAL**		H		C &P		**TOTAL**		H		C &P		TOTAL		**TOTAL**	
XXXVII.	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**
XXXVIII. Regular visits	11	44	13	29	13	33**	21	32	17	44	19	39***	19	35	16	39	17	38***	13	40***
XXXIX. Adequate content	6	39	4	25	5	29***	4	25	3	29	4	27***	4	28	4	28	4	28***	3	30***

McNemar Test for Significance of Change: ***p< .001; **p< .01

Note: Supervision was considered adequate if at least three of the five of following activities were performed during regular visits:
1) service delivery observed; 2) questions asked about current problems in SDP functioning; 3) suggestions made to resolve problems; 4) examination of record keeping system; and 5) praise given for improvements made over time.

Table A.4 *Percentage of SDPs with Contraceptive Methods in Stock at Time of Visit, 1994-98*

XL.	SALVADOR						INTERIOR						BAHIA						INTERVEN.	
XLI.	N=66						N=142						N=208						N=73	
	H		C &P		TOTAL		H		C &P		TOTAL		H		C &P		TOTAL		TOTAL	
XLII.	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98
XLIII. Pills	55	56	74	71	68	67	12	17	23	44	19	34**	24	27	40	53	35	44*	67	85**
Injectables	5	28	2	10	3	15*	2	8	0	8	1	8**	3	13	1	9	1	10***	0	21***
Condoms	50	56	70	50	64	52	10	13	23	33	18	25	21	24	39	39	33	34	64	69
Spermicides	60	44	59	48	59	47	10	11	20	25	16	20	24	20	33	33	30	28	63	69
XLIV. Diaphragms	60	39	48	31	52	33**	8	11	19	28	15	22	22	18	29	29	26	26	56	59
XLV. IUDs (excluding posts)	50	67	67	60	61	62	15	15	31	35	24	27	25	28	45	44	37	38	68	77
XLVI. All appropriate methods	35	28	43	25	41	26	8	4	13	17	12	12	15	10	24	20	21	16	44	38

McNemar Test for Significance of Change: ***p< .001; **p< .01; *p< .05

Note: All appropriate methods for hospitals and centers refer to pills, condoms, spermicides, diaphragms, and IUDs; for health posts, appropriate methods are pills, condoms, spermicides, and diaphragms. Injectables were excluded from this calculation due to the limited time they have been available.

Table A.5 *Median Number of Physicians and Nurses by Level of SDP and Region, 1994-98*

XLVII.	SALVADOR						INTERIOR						BAHIA					
XLVIII.	N=66						N=142						N=208					
	H		C &P		TOTAL		H		C &P		TOTAL		H		C &P		TOTAL	
XLIX.	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98
Median number of MDs	27	9	4	2	6	3	7	5	2	1	3	2	8	5	3	1	4	2
Median Number of Nurses	4	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
L. Median number of MDs and Nurses	36	12	7	4	9	5	8	6	3	2	4	3	10	6	4	2	5	4

Note: MDs refer to obstetricians, gynecologists and general practitioners.

Table A.6 *Percentage of SDPs with Equipment and Supplies Required for Delivery of Various Contraceptive Methods, 1994-98*

LI.	SALVADOR						INTERIOR						BAHIA						INTERVEN.	
LII.	N=66						N=142						N=208						N=73	
	H		C &P		TOTAL		H		C &P		TOTAL		H		C &P		TOTAL		TOTAL	
LIII.	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98	94	98
Ob/Gyn	100	100	100	85	100	89	75	87	66	60	69	70	82	90	77	69	79	76	90	85
Stethoscope	90	94	91	94	91	94	96	98	83	93	88	95*	94	97	86	93	89	95	89	96
BP Gauge	90	100	94	96	92	97	98	98	82	94	88	96*	96	99	86	95	89	96***	93	97
Adult Scale	100	89	91	94	94	92	71	87	79	91	76	89**	79	87	83	92	82	90	92	96
GYN Exam Table	100	94	91	88	94	89	92	98	67	74	76	83	94	97	75	79	82	85	95	95
Speculum	90	100	85	81	86	86	94	96	72	73	80	82	93	97	77	76	82	83	89	86
Ring Forceps	90	83	65	75	73	77	85	94	52	55	64	70	86	92	57	62	67	72	77	81
Tenaculum	80	83	63	73	68	76	83	81	37	44	54	58	82	82	46	54	58	64	73	77
Scissors	90	89	76	71	80	76	94	96	69	73	78	82	93	94	71	72	79	80	88	80
Sterilization Equipment	95	72	98	94	97	88	98	98	93	93	95	95	97	92	95	93	96	93	97	89
Gloves	50	94	44	85	46	88***	33	98	33	85	33	90***	38	97	37	85	37	89***	32	90***
Cotton	NA	89	NA	100	NA	97	NA	100	NA	92	NA	95	NA	97	NA	95	NA	96	NA	96
Gauze	NA	89	NA	100	NA	97	NA	100	NA	88	NA	92	NA	97	NA	92	NA	94	NA	96
Alcohol	90	78	57	85	67	83	69	77	50	70	57	73**	75	78	52	75	60	76***	66	85*
Antiseptic Solution	NA	94	NA	90	NA	91	NA	100	NA	88	NA	92	NA	99	NA	88	NA	92	NA	92

McNemar Test for Significance of Change: ***p < .001; **p< .01; *p< .05
NA=Data not available for 1994

Table A.7 *Percentage of SDPs with All Items Needed to Deliver Contraceptive Methods, 1994-98*

LIV.	SALVADOR						INTERIOR						BAHIA						**INTERVEN.**	
LV.	N=66						N=142						N=208						N=73	
	H		C &P		**TOTAL**		H		C &P		**TOTAL**		H		C &P		TOTAL		**TOTAL**	
LVI.	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**
LVII. Pills	45	56	63	60	58	59	8	13	17	38	13	29***	18	24	32	46	27	39**	58	77*
Injectables	5	22	2	10	3	14	2	8	0	6	1	6**	3	11	1	7	1	9***	0	16**
Condoms	50	56	70	50	64	52	10	13	23	33	18	25	21	24	39	39	33	34	64	69
Spermicides	60	44	59	48	59	47	10	11	20	25	16	20	24	20	33	33	30	28	63	69
Diaphragms	20	22	17	21	18	21	2	8	7	19	5	15**	7	11	10	20	9	17*	21	40*
IUDs	10	39	21	32	18	34*	4	13	6	27	5	21***	6	20	12	29	10	25***	18	49***
All appropriate methods	5	17	13	13	11	14	0	2	3	11	2	8	1	6	7	12	5	10	11	21

McNemar Test for Significance of Change: ***p< .001; **p< .01; *p< .05

Note: All appropriate methods for hospitals and centers refer to pills, condoms, spermicides, diaphragms, and IUDs; for health posts, all appropriate methods include pills, condoms, spermicides, and diaphragms. Injectables were excluded from this calculation due to the limited time they have been available.

Table A.8 *SDP Readiness to Perform Pap Smears and Curative RTI Services: Percentage of SDPs with All Required Items, 1994-98*

LVIII. / LIX. / LX.	SALVADOR N=66						INTERIOR N=142						BAHIA N=208						INTERVEN. N=73	
	H		C &P		**TOTAL**		H		C &P		**TOTAL**		H		C &P		TOTAL		**TOTAL**	
	94	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**
MD or Nurse	100	100	100	94	100	96	94	100	91	91	92	94	96	100	94	92	95	95	97	96
Lamp/Hand Light	100	100	87	83	91	88	94	96	71	74	80	82	96	97	77	77	83	84	95	93
GYN Exam Table	100	94	91	88	94	89	92	98	67	74	76	83	94	97	75	79	82	85	95	95
Speculum	90	100	85	81	86	86	94	96	72	73	80	82	93	97	77	76	82	83	89	86
Sterilization Equipment	95	72	98	94	97	88	98	98	93	93	95	95	97	92	95	93	96	93	97	89
Gloves	50	94	44	85	46	88***	33	98	33	85	33	90***	38	97	37	85	37	89***	32	90***
Slides	20	56	17	63	18	61***	15	47	13	35	14	39***	17	49	15	45	15	46***	19	58***
Wooden Spatulas	25	67	20	79	21	76***	15	60	13	61	14	61***	18	62	15	67	16	65***	21	73***
LXI. All 8 Items	15	50	13	50	14	50***	8	42	8	29	8	34***	10	44	10	37	10	39***	12	49***
Additional Items for Dx of RTIs:																				
Ring Forceps	90	83	65	75	73	77	85	94	52	55	64	70	86	92	57	62	67	72	77	81
Acetic Acid	75	78	61	56	65	62	56	53	27	38	37	44	61	59	38	45	46	50	56	58
Microscope	75	61	35	27	47	36	58	59	22	21	35	35	63	59	27	23	39	36	47	37
LXII. All 11 Items	10	39	2	15	5	21***	4	36	0	14	1	22***	6	37	1	14	2	22***	1	23***

McNemar Test for Significance of Change: ***p< .001

Table A.9 *SDP Readiness to Provide Basic Pre-natal Care: Percentage of SDPs with All Required Items, 1994-98*

LXIII.	SALVADOR						INTERIOR						BAHIA						**INTERVEN.**	
LXIV.	N=66						N=142						N=208						N=73	
	H		C &P		**TOTAL**		H		C &P		**TOTAL**		H		C &P		TOTAL		**TOTAL**	
LXV.	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**	**94**	**98**
MD or Nurse	100	100	100	94	100	96	94	100	91	91	92	94	96	100	94	92	95	95	97	96
Adult Scale	100	89	91	94	94	92	71	87	79	91	76	89**	79	87	83	92	82	90	92	96
BP Gauge	90	100	94	96	92	97	98	98	82	94	88	96	96	99	86	95	89	96***	93	97
Stethoscope	90	94	91	94	91	94	96	98	83	93	88	95*	94	97	86	93	89	95	89	96
Fetoscope	95	72	94	88	94	83*	94	93	82	82	87	86	94	87	86	84	89	85	96	88
LXVI. Exam table	100	94	91	88	94	89	92	98	67	74	76	83	94	97	75	79	82	85	95	95
LXVII. Tape measure	80	78	96	92	91	88	90	87	76	82	81	84	88	85	82	85	84	85	88	92
Thermometer	85	94	89	83	88	86	94	96	80	83	85	88	92	96	83	83	86	88	88	89
LXVIII. Iron supplements	50	44	37	79	41	70**	60	47	24	43	37	44	57	47	29	56	39	52**	44	73***
Tetanus toxoid	45	44	83	83	71	73	21	23	62	71	47	53	28	28	69	75	55	59	78	88
Prenatal cards	40	56	59	65	53	62	17	43	33	69	28	59***	24	47	42	67	36	60***	52	73**
LXIX. All 11 items	5	33	20	40	15	38**	4	9	9	20	7	16**	4	16	13	27	10	23***	15	44***

McNemar Test for Significance of Change: ***p< .001; **p< .01; *p< .05